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U.S. Department
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**National Highway
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*** *** ***

DYNAMIC SCIENCE, INC.
In-Depth Accident Investigation

Contract DTNH22-87C-47169
Case DSI-93-AB-007

[redacted] 1993

TECHNICAL SUMMARY

CONTRACTOR: Dynamic Science, Inc.
CONTRACT NUMBER: DTNH22-87C-47169
CASE NUMBER: Case DSI-93-AB-007

[redacted]

This two vehicle collision occurred on a six-lane, divided, urban roadway on an early spring weekday afternoon in [redacted], North Carolina. It was raining and the roadway was wet.

Vehicle 1, a 1990 Lincoln Town Car, was being driven west in westbound travel lane two at a speed estimated to be between 64 and 72 KPH (40 and 45 MPH) by the restrained, 35 year old female driver (the case occupant). Sitting in the right front seating position was a restrained 11 year old male.

Vehicle 2, a 1979 Ford Mustang three-door, was being driven east in eastbound travel lane two by the unrestrained 21 year old male driver at a speed estimated to be between 72 and 80 KPH (45 and 50 MPH).

The driver of Vehicle 2, in an attempt to change lanes, lost control of his vehicle and began a left side leading skid. Vehicle 2, in this configuration, crossed the raised concrete median and slid into the travel path of Vehicle 1. The entire front plane of Vehicle 1 impacted the left rear side plane of Vehicle 2. At impact the passenger side airbag deployed, but the driver's side airbag did not.

The Delta V for Vehicle 1 was computed, using CRASH III PC, as 16.3 KPH (10.1 MPH) using a CDC of 12FDEW1 and a PDOF of 350 degrees. The combined direct and induced damage width was 175 cm (69 in) and the maximum crush depth was 32 cm (12.6 in) at C_1. The Delta V for Vehicle 2 was computed, using CRASH III PC, as 25.8 KPH (16.1 MPH) using a CDC of 09LZEW3 and a PDOF of 263 degrees. The combined direct and induced damage width was 152 cm (60 in) and the maximum crush depth was 44 cm (17.4 in) at C_4.

After impact, both vehicles came to final rest on the raised concrete median facing south.

The driver of Vehicle 1 (case occupant) sustained minor injuries consisting of contusions and strains; maximum AIS = AIS-1. She was transported to a local hospital where she was treated and released. The right front seating position occupant sustained minor injuries consisting of abrasions and strains; maximum AIS = AIS-1. He was transported to a local hospital where he was treated and released.

The driver of Vehicle 2, according to police, sustained non-incapacitating injuries of unknown nature or severity. His course of treatment could not be determined.

Both vehicles were towed from the scene due to damage sustained in this collision.

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The crash investigation process is an inexact science which requires that physical evidence such as skid marks, vehicular damage measurements, and occupant contact points be coupled with the investigator's expert knowledge and experience of vehicle dynamics and occupant kinematics in order to determine the pre-crash, crash, and post-crash movements of involved vehicles and occupants.

Because each crash is a unique sequence of events, generalized conclusions cannot be made concerning the crashworthiness performance of the involved vehicle(s) or their safety systems.

DYNAMIC SCIENCE, INC.
ACCIDENT INVESTIGATION
CASE NUMBER: DSI-93-AB-007

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D. Vehicle Records and Owner Pictures

Dynamic Science, Inc.
In-Depth Investigation
Case Number: DSI-93-AB-007

ACCIDENT DATA:

Location:	[redacted] North Carolina
Area/Type:	Urban/Commercial
Date/Time:	Spring/Afternoon
Accident Type:	Car/Car - Right Angle

Injury Severity:

Vehicle 1:	Driver (case occupant), AIS-1 R/F Occupant, AIS-1
Vehicle 2:	Driver, reported non-incapacitating injuries of unknown nature or severity

AMBIENCE:

Viewing Conditions:	Fair, restricted by rain and traffic mist
Cloud Cover:	Heavy
Precipitation:	Moderate to heavy rain
Temperature:	21 to 24 ° C (70 to 75 ° F)
Road Surface:	Wet with standing water

ROADWAY:

	VEHICLE 1	VEHICLE 2
Type:	6-lane, divided with dedicated left turn lanes.	6-lane, divided with dedicated left turn lanes.
Width:	29.6 m (97.2 ft)	29.6 m (97.2 ft)
Traffic Density:	Moderate to heavy	Moderate to heavy
Median:	Raised concrete	Raised concrete
Edge:	1.5 m (5 ft) asphalt paved shoulder	1.2 m (4 ft) asphalt paved shoulder
Surface:	Asphalt paved	Asphalt paved
Reported Defects:	None	None
Co-efficient of Friction (est.):	.80 (wet)	.80 (wet)
Vertical Alignment:	Level	Level
Horizontal Alignment:	Straight	Straight

Traffic Controls:

	VEHICLE 1	VEHICLE 2
Signals:	None	None
Signs:	None	None
Speed Limit:	80 KPH (50 MPH)	80 KPH (50 MPH)
Markings:	Single, solid, white painted line separating shoulder from westbound travel lane 1. Single, broken, white painted line separating westbound travel lanes 1 and 2. Single, solid yellow painted line separating westbound travel lane 2 and raised concrete median. Standard solid, white painted railroad crossing warning in both westbound travel lanes.	Single, solid, white painted line separating shoulder from eastbound travel lane 1. Single, broken, white painted lines separating eastbound travel lanes 1, 2 and 3. Single, broken white painted line separating eastbound travel lane 3 and dedicated left turn lane.

VEHICLES:

	VEHICLE 1	VEHICLE 2
Description:	1990 Lincoln Town Car	1979 Ford Mustang II
Odometer:	123,827 km (76,959 mi)	179,748 km (111,714 mi)
Engine:	V8 / 5.0 L	L4 / 2.3L
Vehicle Modifications:	None	None
Tire Condition:	Good, approximately 40 percent of tread remained. No abnormal tread wear patterns.	Poor, less than 10 percent of tread remained. Tread wear patterns indicate faulty wheel alignment.
Manual Restraints:	3-point, manual lap/shoulder restraints at L/F, R/F, L/R and R/R seating positions. 2-point manual lap restraints at C/F and C/R seating positions.	3-point, manual lap/shoulder restraints at L/F, R/F seating positions. 2-point manual lap restraints at L/R, C/R and R/R seating positions.
Automatic Restraints:	Driver's and passenger's side airbag	None
Reported Defects:	None	None
Cargo:	None	None
Windshield Damage:	Cracked by left rear hood corner.	None
Fleet:	None	None
Tow Status:	Towed due to collision damage	Towed due to collision damage

VEHICLE DAMAGE:

	VEHICLE 1	VEHICLE 2
Object Struck:	Vehicle 2	Vehicle 1
Event Number:	1	1
CDC:	12FDEW1	09LZEW3
Maximum Crush:	32 cm (12.6 in) at C_1	44 cm (17.4 in) at C_4

VEHICLE VELOCITY ESTIMATES:

	VEHICLE 1	VEHICLE 2
Impact Speed: (estimated)	64-72 KPH (40-45 MPH)	56-64 KPH (35-40 MPH)
Total Delta V:	16.3 KPH (10.1 MPH)	25.8 KPH (16.1 MPH)
Longitudinal Delta V:	-16.0 KPH (-10.0 MPH)	-3.1 KPH (-2.0 MPH)
Lateral Delta V:	2.8 KPH (1.8 MPH)	25.6 KPH (15-9 MPH)
Energy Dissipation:	34,952.7 joules (25,776.4 ft-lb)	48,023.1 joules (35,415.3 ft-lb)

Calculations based upon: CRASH III PC, damage only routine.
No other calculations due to lack of residual scene evidence.

COLLISION SEQUENCE:

Pre-Crash: This two vehicle collision occurred during the afternoon hours of a spring weekday on an east/west six-lane, divided, asphalt paved, urban/commercial roadway in [redacted], North Carolina. The weather was cloudy, it was raining, the roadway was wet and there was standing water on the road surface. Viewing conditions were restricted by the moderate to heavy rainfall. Traffic density was moderate to heavy. The posted speed limit is 80 KPH (50 MPH).

The westbound road consists of a 1.5m (5 ft) asphalt paved shoulder separated from the north edge of westbound travel lane one by a single, solid, white painted line. Westbound travel lanes one and two are separated by single, broken, white painted lines. The south edge of travel lane two is separated from the yellow painted, raised concrete median by a single, solid, yellow painted line. In each westbound travel lane there is a white painted 2.4m x 4.9m (8 ft. x 16 ft.) railroad crossing warning applied to the road surface.

The eastbound roadway consists of a 1.2m (4 ft) asphalt paved shoulder separated from the south edge of eastbound travel lane one by a single, solid, white painted line. Eastbound travel lanes one, two and three are separated by single, broken, white painted lines. The north edge of eastbound travel lane three is separated from the dedicated left turn lane by single, broken, white painted lines and a yellow painted, raised concrete traffic channelizer. The north edge of the left turn lane is the yellow painted, raised concrete median.

Vehicle 1, a 1990 Lincoln Town Car, was being driven west in westbound travel lane two at a speed estimated to be between 64 and 72 KPH (40 and 45 MPH) by the 35 year old female driver (the case occupant), who was restrained by the available 3-point manual lap/shoulder safety restraint. Seated in the right front seating position was an 11 year old male who was restrained by the available 3-point manual lap/shoulder safety restraint.

Vehicle 2, a 1979 Ford Mustang three-door, was being driven east in eastbound travel lane two at a speed estimated to be between 72 and 80 KPH (45 and 50 MPH) by the 21 year old male driver who was not wearing the available 3-point manual lap/shoulder safety restraint.

While in the process of moving from eastbound travel lane two to eastbound travel lane three, the back wheels of Vehicle 2 lost traction on the wet roadway surface and the vehicle began a yaw to the right. The driver over-corrected and Vehicle 2 began a left side leading slide across

the eastbound left turn lane, the raised concrete median and into westbound travel lane two and the travel path of Vehicle 1.

As Vehicle 2 entered the travel path of Vehicle 1, the driver of Vehicle 1 steered right and braked in an effort to avoid Vehicle 2.

Crash: The avoidance actions by the driver of Vehicle 1 were unsuccessful and the front plane of Vehicle 1 impacted the left rear side plane of Vehicle 2 in a right angle configuration. The Delta V for Vehicle 1 was computed, using CRASH III PC, as 16.3 KPH (10.1 MPH) using a CDC of 12FDEW1 and a PDOF of 350 degrees. The combined direct and induced damage width was 175 cm (69 in) and the maximum crush depth was 32 cm (12.6 in) at C_1. The Delta V for Vehicle 2 in this impact was computed, using CRASH III PC, as 25.8 KPH (16.1 MPH) using a CDC of 09LZEW3 and a PDOF of 263 degrees. The combined direct and induced damage width was 152 cm (60 in) and the maximum crush depth was 44 cm (17.4 in) at C_4.

The forces in this impact apparently equaled or exceeded the manufacturer's minimum threshold in the supplemental restraint system and the passenger side airbag deployed. However, the forces were apparently insufficient to trigger the driver's airbag and it DID NOT deploy.

Post Crash: After impact, Vehicle 1 rotated approximately 105 degrees counter-clockwise and came to final rest facing south-southeast astraddle the raised concrete median approximately 15.2 m (50 ft) west of POI. Vehicle 2, which was astraddle the median at impact, did not rotate and came to final rest facing south approximately 9.8 m (32 ft) west of POI.

Occupant Kinematics:

The 35 year old female driver of Vehicle 1 was seated on a split bench seat with separate backs in a normal, upright position with her right foot on the brake pedal and her left foot on the floor/toe pan. Both hands were on the steering wheel rim at the 10:00 and 2:00 o'clock positions. The driver is 163 cm (64 in) in height and weighs 61 kg (135 lb).

During the on-site vehicle inspection the driver's six-way power seat was found to be adjusted to the full forward and full upward positions. The seat back was adjusted to a normal, upright configuration. During the interview with the driver, she confirmed that the seat was in its normal position for her when she was driving and had not been changed since the accident.

The driver of Vehicle 1 (the case occupant) was wearing the available manual lap/shoulder safety restraint in a normal manner - the shoulder restraint across the left shoulder and chest, and the lap restraint across the lower abdomen and upper thighs. At impact, the driver was projected forward, loading the shoulder restraint which resulted in a contusion of the lower right chest. Her head continued forward and downward resulting in a cervical strain. The driver's hips slid forward on the leather covered seat and she began to submarine the lap restraint which resulted in a contusion to the lower abdomen and strains to the muscles in the right hip and lower back.

In addition, as Vehicle 1 began the counter-clockwise rotation, the driver's head contacted the left front window glazing resulting in a contusion to the left jaw.

Occupant 2, sitting in the right front seating position, was wearing the available manual lap/shoulder restraints in a normal manner. The right front seat was adjusted to a point midway between the full forward and the center positions. The seat back was reclined approximately 5 degrees. This occupant is 147 cm (58 in) in height and weighs 39 kg (86 lb) and he had both feet on the right front floor pan. The position of his hands is unknown. At impact, Occupant 2 was projected forward loading the lap/shoulder restraints and as his head continued forward his face made contact with the passenger side airbag as it deployed. He sustained abrasions to his chin and lower lip from this contact. In addition, as his head continued forward as he loaded the safety restraints, he sustained a cervical strain.

Airbag System: Vehicle 1 was a 1990 Lincoln Town Car equipped with a driver and passenger side airbag. At impact with Vehicle 2, the passenger side airbag deployed while the driver's side airbag did not. The owner of Vehicle 1 contends that if the passenger's airbag deploys so then should the driver's side airbag deploy. The owner further contends that the supplemental restraint system installed in his vehicle was defective.

During the on-site inspection by Dynamic Science, Inc. 22 days post accident and within 72 hours of notification, it was determined that the passenger side airbag was manufactured by TRW. Imprinted on the top side of the airbag, in red ink, was the number 002511 and a capital letter "I" over the number. The deployed airbag width measured 68.6 cm (27 in) from seam to seam and had an inflated volume of approximately .24 m^3 (8 ft^3). Imprinted on the backside of the module trim cover were two codes - TRW91317C and CAV9. Also, during this initial inspection, the deployed airbag had four vertical fold creases, two at each edge of the airbag, near the edge seam stitching.

The airbag was vented by two ports located on each side of the bag near the instrument panel and away from the right front passenger. Each port measured approximately 4.8 cm (1.9 in) in diameter. The airbag did not appear to be tethered, and there was no evidence of occupant contact found on the airbag fabric.

During the initial vehicle inspection, the SRS light on the instrument panel flashed seven times when the ignition switch was turned on. Section 41-58, Restraint System - Supplemental Airbag, of the Ford Motor Company Repair Manual states on page 41-58-40 that seven flashes of the SRS light indicates that the "... passenger airbag circuit is inoperative." As the passenger side airbag had deployed, this appear to be a correct diagnosis.

At the completion of the field inspection of Vehicle 1, the vehicle was removed to a local Lincoln-Mercury services facility for a more complete diagnostic test and an in-depth inspection of the Supplemental Restraint System. These tests were monitored by this investigator, a representative of the Ford Motor Company, and the service facility manager. A Ford Motor Company engineer assisted in the various tests by telephone.

The Supplemental Restraint System was tested for voltage and resistance levels as were the individual components of the system. The results of each test were well within the manufacturer's specifications. At the completion of these various tests, each component was removed for a visual inspection and their condition, part numbers and serial numbers are listed below. All components, except the driver's side undeployed airbag module and the wiring harness, are submitted with this report.

1) Driver's side airbag module. - Not deployed
Serial and part numbers: [redacted]

This component was re-attached to Vehicle 1 - the service facility refused to deploy the module for transport.

2) Passenger side airbag module. - Deployed
Codes on airbag fabric: [redacted]
Codes on module trim cover: [redacted]

Serial and part numbers: [redacted]

Upper right corner of instrument panel, behind the module, was broken.

3) Right front sensor. - in R/F fender, no apparent damage.
Serial and part numbers: [redacted]

4) Center front sensor. - on hood latch support, no apparent damage.
Serial and part numbers: [redacted]

5) Left front sensor. - in L/F fender - mounting flanges are deformed.
Serial and part numbers: [redacted]

6) Rear sensor. - Left cowl side panel - no apparent damage.
Serial and part numbers: [redacted]

7) Diagnostic module - Behind center instrument panel - no apparent damage.
Serial and part numbers: [redacted]
[redacted]w/foam
[redacted]

8) Timer Delay. - Behind center instrument panel - no apparent damage.
Serial and part numbers: [redacted]

While conducting the tests at the service facility, Vehicle 1 was placed on a vehicle lift and raised for an undercarriage inspection. This inspection revealed no scrapes, scratches or other damage that could be attributed to the events of the collision. The Energy Absorbing Devices (EADs) on the front bumper were inspected at this time. The right front EAD appeared to be at its normal extension and there was no evidence of compression. The left front EAD had "stroked" 2.5 cm (1.0 in) during the collision.

Based on vehicle inspection, reconstruction data, and interviews with engineers in the airbag industry and [redacted], the following information was developed:

1) the maximum crush for Vehicle 1 was 32 cm (12.6 in) at C_1;
2) The Delta V for Vehicle 1 was 16.3 KPH (10.1 MPH);
3) The manufacturer's SRS threshold for the 1990 Lincoln Town Car is 13 to 23 KPH (8 to 14 MPH);
4) In early Lincoln Town Cars with double airbags, there was a higher impedance at the driver's side airbag module than at the passenger side airbag module and an approximately two millisecond overlap at the diagnostic module.

It would appear that, based upon the manufacturer's SRS threshold and the Delta V for Vehicle 1, the forces in this collision were marginal and that, coupled with the mismatched impedance of the two airbags, when the pulse was sent, only enough "trickled" through to activate and deploy the passenger side airbag. The pulse was not strong enough, or long enough, to overcome the stronger resistance in the driver's side airbag and it did not deploy.

It is this investigator's opinion that the Supplemental Restraint System in Vehicle 1 was not defective, and that it performed within design parameters.

Scene Clearance: The driver of Vehicle 1 (the case occupant) sustained minor injuries consisting of contusions and muscle strains; maximum AIS = AIS-1. She did not require assistance in exiting the vehicle, and was transported to a local hospital where she was treated and released. Occupant 2 sustained minor injuries consisting of abrasions and a muscle strain; maximum AIS = AIS-1. He did not require assistance in exiting the vehicle, and was transported to a local hospital where he was treated and released. No extrication procedures were required to gain access to the occupants of Vehicle 1.

The driver of Vehicle 2 would not cooperate with this investigation due to pending litigation. However, according to police officers, the driver sustained non-incapacitating injuries of unknown nature or severity. He was transported to a local hospital, but his course of treatment could not be determined.

Both Vehicle 1 and Vehicle 2 were towed from the scene due to damage sustained in this collision.

Safety Standards: There were no violations of Federal Motor Vehicle Safety Standards and Regulations found during the complete inspections of Vehicle 1 and Vehicle 2.

Prior Vehicle Damage:

Vehicle 1 had been involved in two prior accidents according to the owner. This was confirmed by a local body repair shop and the local Lincoln-Mercury service facility.

The first confirmed accident damage was in [redacted] 1992. Vehicle 1 sustained damage to the back bumper and the two back fenders when it was involved in a rear-end collision. Repair costs were approximately $1,300 and included replacing the rear bumper and bumper facia. There were stress buckles to the right and left back fenders as a result of this collision that were not repaired.

The second confirmed collision occurred on or about [redacted] 1992. Vehicle 1 sustained damage to the left front that included the left front bumper, left front fender, hood, grille and headlight/side marker light assembly. The repair costs for this damage were $2,262.55 and the repairs were completed in [redacted] 1993. In addition, the owner had the engine and drive train inspected for possible damage by the local Lincoln-Mercury service facility. No damage to the engine or drive train was found during the inspection.

The auto body repair shop manager stated in an interview that neither airbag deployed in the two prior accidents, and that he personally had inspected the vehicle's SRS components and had found no apparent damage. He further stated that he had not personally conducted any diagnostic tests to the SRS, but that the local Lincoln-Mercury service facility may have. The Lincoln-Mercury service facility had no record of any diagnostic test on the system after either of the accidents.

DRIVER AND OTHER OCCUPANTS:

VEHICLE 1

	DRIVER	OCCUPANT 2
Age/Sex:	35 year old/Female	11 year old/Male
Seated Position:	Left Front	Right Front
Seat Type:	Split bench	Split bench
Height:	163 cm (64 in)	147 cm (58 in)
Weight:	61 kg (135 lb)	39 kg. (86 lb)
Occupation:	Housewife	Student
Pre-existing Medical Condition:	None reported	None reported
Alcohol/Drug Involvement:	None	None
Driving Experience:	19 years	N/A
Body Posture:	Normal, upright seated position	Normal, upright seated position with back reclined approximately 5 degrees.
Hand Position:	Both hands on steering wheel rim at approximately the 10 and 2 o'clock positions	Unknown
Foot Position:	Right foot on brake, left foot on floor/toe pan	Both feet on floor pan
Restraint Usage:	3-point manual lap/shoulder restraint	3-point manual lap/shoulder restraint
Additional Occupants:	One	None

DRIVER AND OTHER OCCUPANTS (con't):

VEHICLE 2

	DRIVER
Age/Sex:	21 year old/Male
Seated Position:	Left front
Seat Type:	Bucket
Height:	Refused
Weight:	Refused
Occupation:	Refused
Pre-existing Medical Condition:	None known
Alcohol Involvement:	None
Driving Experience:	Approximately 5 years
Body Posture:	Refused
Hand Position:	Refused
Foot Position:	Refused
Restraint Usage:	None
Additional Occupants:	None

INJURIES:

Vehicle 1

	INJURY	OIC CODE	ICD-9	SOURCE
DRIVER:	Contusion, Left Jaw	3290402.1,2	920	L. Side Window
	Cervical Strain	3640278.1,6	847.0	Inertial forces
	Lumbar Strain	3640678.1,8	847.2	Inertial forces
	Contusion, Lower R. Chest	7490402.1,1	922.1	Shoulder restraint
	Contusion, Lower Abdomen	7590402.1,4	922.2	Lap restraint
	Muscle Strain, R. Hip	3840602.1,1	843.9	Lap restraint
R/F OCCUPANT:	Abrasion, Chin	3290202.1,8	910	Airbag
	Abrasion, Lower lip	7290202.1,8	910	Airbag
	Cervical strain	3640278.1,6	847.0	Inertial forces

INJURIES:

Vehicle 2

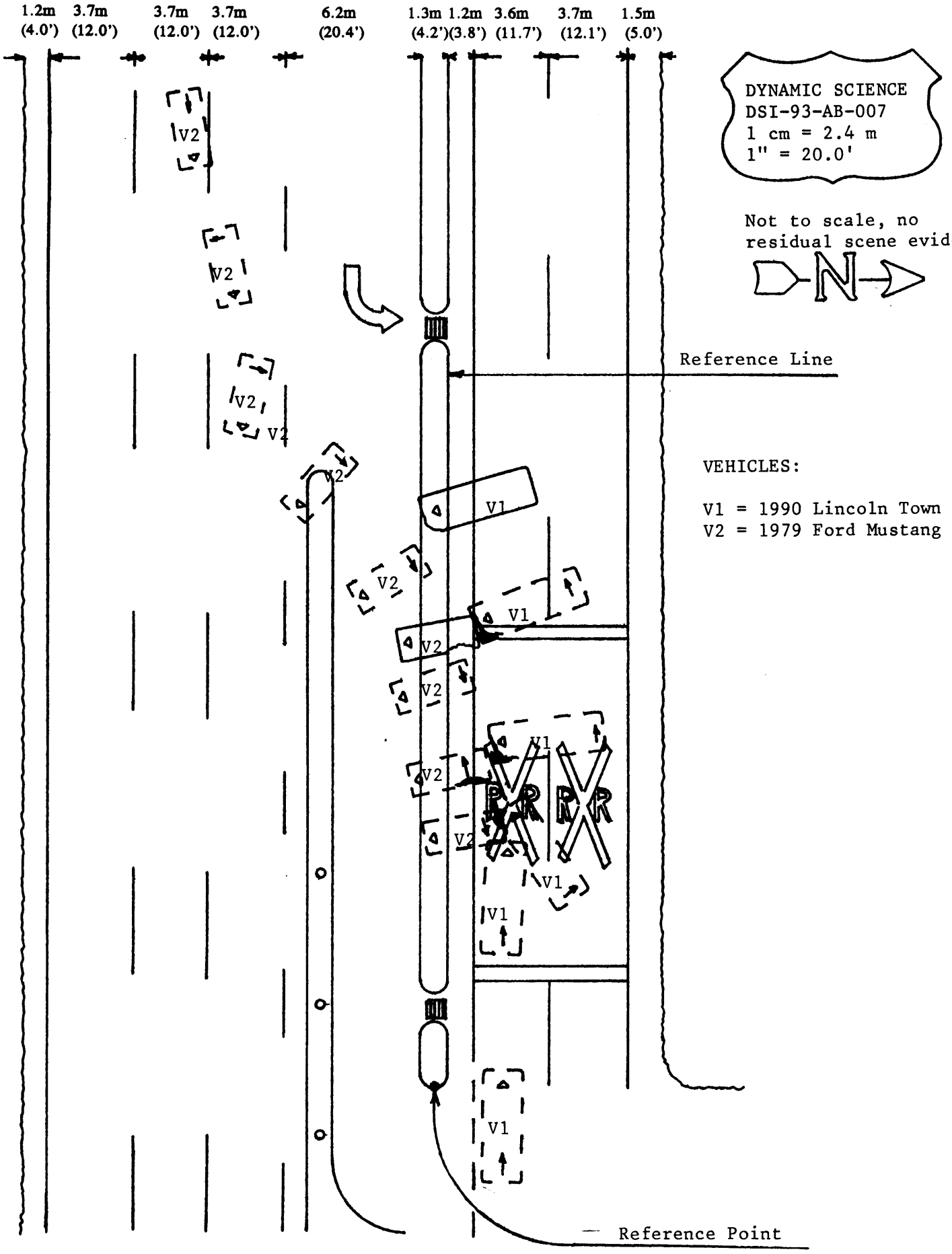
	INJURY	OIC CODE	ICD-9	SOURCE
DRIVER:	Reportedly sustained non-incapacitating injuries of unknown nature or severity, course of treatment could not be established.			

Abbreviations Used In Scene And Photographic Documentation

'	Feet
"	Inches
AIS	Abbreviated Injury Scale
BLF	Begin Left Front
BLR	Begin Left Rear
BRF	Begin Right Front
BRR	Begin Right Rear
CBE	Cab Behind Engine
CCW	Counterclockwise
CDC	Collision Deformation Classification
CG	Center of Gravity
CM	Centimeter
COE	Cab Over Engine
CW	Clockwise
E, EB	East, Eastbound
ELF	End Left Front
ELR	End Left Rear
ERF	End Right Front
ERR	End Right Rear
FRP	Final Rest Position
I	Interstate Highway
IP	Intermediate Point
KG	Kilogram
KPH	Kilometers Per Hour
LF	Left Front
LR	Left Rear
M	Meter
N, NB	North, Northbound
NE	Northeast
NW	Northwest
PDOF	Principal Direction of Force
POI	Point of Impact
R	Radius of Curvature
RF	Right Front
RL	Reference Line
RP	Reference Point
RR	Right Rear
S, SB	South, Southbound
SE	Southeast
SW	Southwest
T	Time or Elapsed Time (in seconds)
U.S.	United States Highway
V1	Vehicle Number 1
W, WB	West, Westbound

Body Contacts and Injury Table, Case DSI-93-AB-007
35 Year Old Female; Left Front
1990 Lincoln Town Car; Impact Plane: Frontal
CDC = 12FDEW1; PDOF = 350°; Delta V = 16.3 KPH (10.1 MPH)

OIC/AIS CODE	ICD-9	INJURIES	CONTACT POINT
3290402.1,2	920	Contusion, Left Jaw	L. Side Window
3640278.1,6	847.0	Cervical Strain	Inertial forces
3640678.1,8	847.2	Lumbar Strain	Inertial forces
7490402.1,1	922.1	Contusion, Lower R. Chest	Shoulder restraint
7590402.1,4	922.2	Contusion, Lower Abdomen	Lap restraint
3840602.1,1	843.9	Muscle Strain, R. Hip	Lap restraint


1.2m (4.0')
3.7m (12.0')
3.7m (12.0')
3.7m (12.0')
6.2m (20.4')
1.3m (4.2')
1.2m (3.8')
3.6m (11.7')
3.7m (12.1')
1.5m (5.0')
DYNAMIC SCIENCE
DSI-93-AB-007
1 cm = 2.4 m
1" = 20.0'
Not to scale, no residual scene evidence
N
Reference Line
VEHICLES:
V1 = 1990 Lincoln Town Car
V2 = 1979 Ford Mustang II
Reference Point

COLLISION MEASUREMENTS

Case Number DSI-93-AB-007

Reference Point: East Tip, raised median

Reference Line: North edge, raised median

DATA POINT	LONGITUDINALS	LATERALS
North edge roadway	30.5m (100 ft) W	9.9m (32.6 ft) N
Single, white line, north edge westbound travel lane 1	30.5m (100 ft) W	8.4m (27.6 ft) N
Broken, white line, separates westbound travel lanes 1 and 2	30.5m (100 ft) W	4.7m (15.5 ft) N
Single, yellow line, south edge of westbound travel lane 2	30.5m (100 ft) W	1.2m (15.5 ft) N
North edge, raised median	30.5m (100 ft) W	0
South edge, raised median	30.5m (100 ft) W	1.3m (4.2 ft) S
North edge, turn lane channelizer	27.4m (90 ft) W	5.3m (17.5 ft) S
South edge, turn lane channelizer	27.4m (90 ft) W	6.6m (21.6 ft) S
Broken, white line, north edge eastbound travel lane 3	30.5m (100 ft) W	7.5m (24.6 ft) S
Broken, white line, separates eastbound travel lanes 2 and 3	30.5m (100 ft) W	11.2m (36.6 ft) S
Broken, white line, separates eastbound travel lanes 1 and 2	30.5m (100 ft) W	14.8m (48.6 ft) S
Single, white line, south edge eastbound travel lane 1	30.5m (100 ft) W	17.3m (56.6 ft) S
South edge of roadway	30.5m (100 ft) W	19.7m (64.6 ft) S
POI, Vehicles 1 and 2	11.6m (38.2 ft) W	2.6m (8.6 ft) N
FRP, Vehicle 1	26.0m (85.2 ft) W	.6m (2.1 ft) S
FRP, Vehicle 2	20.4m (66.8 ft) W	.6m (2.1 ft) S

SLIDE INDEX

Case No. DSI-93-AB-007

PHOTO NO.	VEHICLE NO.	DIRECTION OF PICTURE	SUBJECT MATTER
1	Vehicle 1	east	Approach path, Vehicle 1
2-4	Vehicle 1	west	Travel path, Vehicle 1
5	Vehicle 1	west	POI, Vehicles 1 and 2
6	Vehicle 1	east	Reverse travel path, Vehicle 1 from POI
7-9	Vehicle 1	west	Travel path, Vehicle 1 POI to FRP
10	Vehicle 1	west	FRP, Vehicle 1
11	Vehicle 1	east	Reverse travel path, Vehicle 1 from FRP
12	Vehicle 2	west	Approach path, Vehicle 2
13-19	Vehicle 2	east	Travel path, Vehicle 2
20	Vehicle 2	east	POI, Vehicles 2 and 1
21	Vehicle 2	east	FRP, Vehicle 2
22-40	Vehicle 1	CCW	Exterior views, Vehicle 1
41-56	Vehicle 1	---	Interior views, Vehicle 1
57-58	Vehicle 1	---	R/F fender A/B sensor
59-60	Vehicle 2	---	Center A/B Sensor - hood latch
61-62	Vehicle 1	---	L/F fender A/B sensor
63-65	Vehicle 1	---	L/F kick panel A/B sensor
66	Vehicle 1	---	SRS light, after R/F A/B by-pass
67-72	Vehicle 1	---	Driver's side A/B module
73	Vehicle 1	---	By-pass loop for passenger side A/B
74-77	Vehicle 1	---	Passenger side A/B module
78	Vehicle 1	---	Timer delay module
79	Vehicle 1	---	Control module
80-94	Vehicle 2	CCW	Exterior views, Vehicle 2
95-113	Vehicle 2	---	Interior views, Vehicle 2

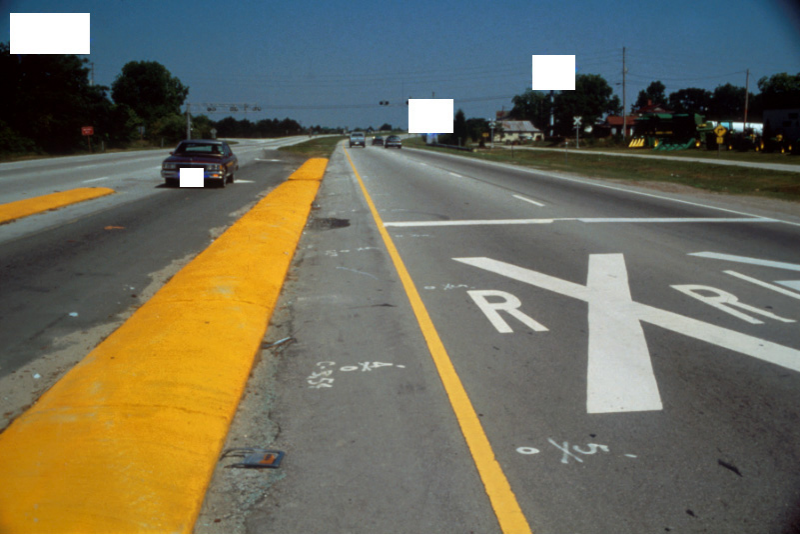
DS9307 #1

DS 9307 #2

DS 9307 #3

DS 9307 #4

DS 9307 #5



DS 9307 #6

DS 9307 #7

DS 9307 #8

DS 9307 #9

DS9307 #10

DS9307 #11

DS9307 #12

DS9307 #13

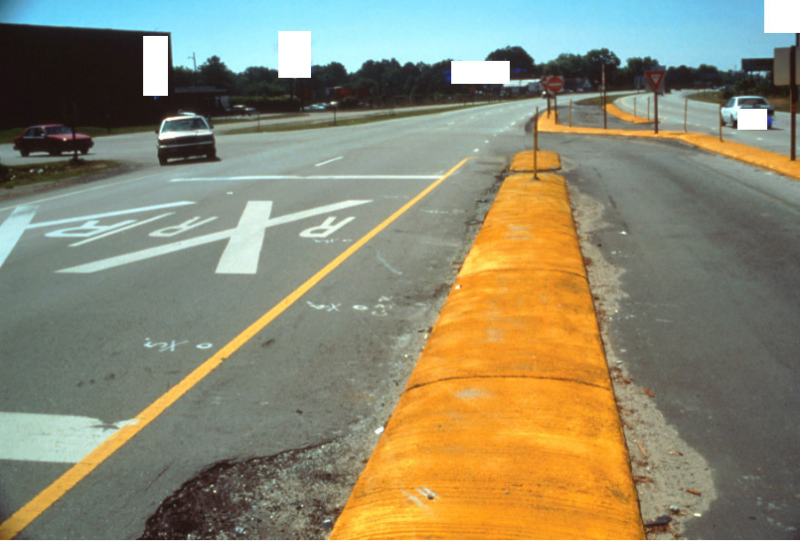
DS9307 #14

DS9307 #15

DS9307 #16

DS 9307 #17

DS 9307 #18



DS 9307 #19

DS9307 #20

DS9307 #21

DS 9307 #22

DS 9307 #23
Best Available

DS9307 #24

DS9307 #25

DS9307 #26

DS9307 #27

DS9307 #28

DS9307 #29

DS9307 #30

DS9307 #31

DS9307 #32

DS 9307 #33

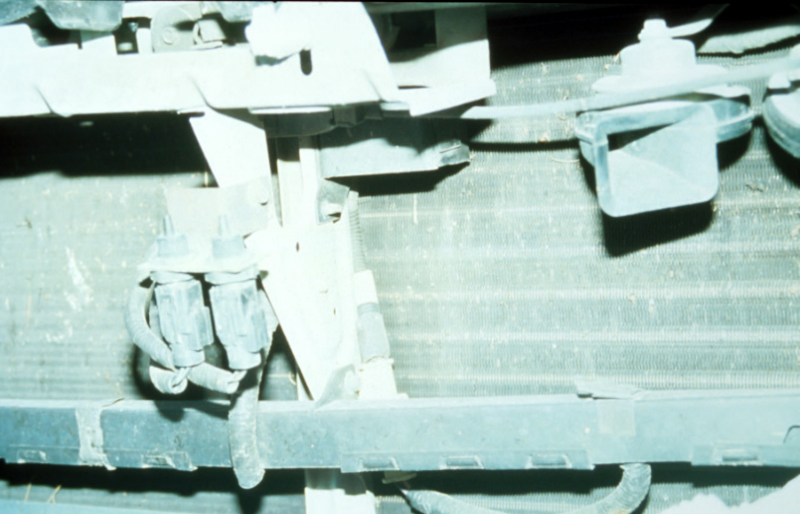
DS9307 #34

DS 9307 #35

DS 9307 #36
Best Available

DS 9307 #37
Best Available

DS9307 #38



DS 9307 #39

DS9307 #40

DS 9307 #41

DS9307 #42

DS9307 #43

DS9307 #44

DS 9307 #45

DS9307 #46

DS9307 #47

DS9307 #48

DS9307 #49

DS9307 #50

DS 9307 #51

DS9307 #52

DS9307 #53

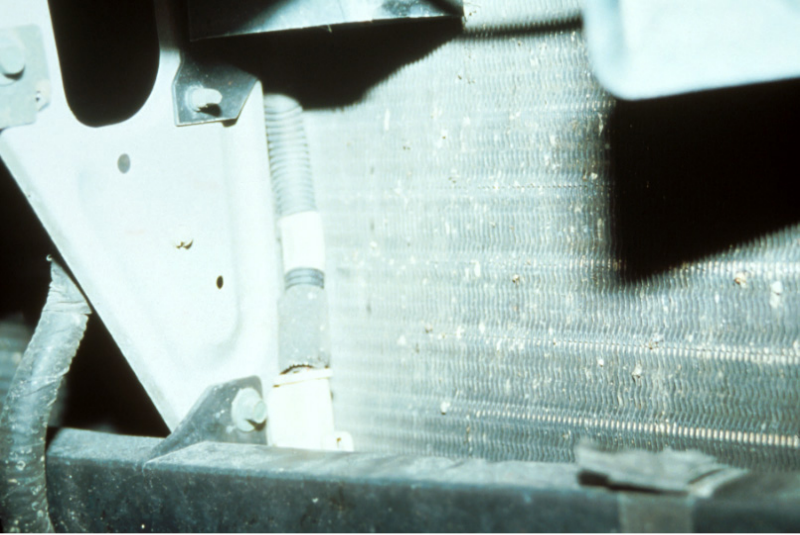
DS9307 #54

DS 9307 #55

DS9307 #56

DS9307 #57

DS 9307 #58



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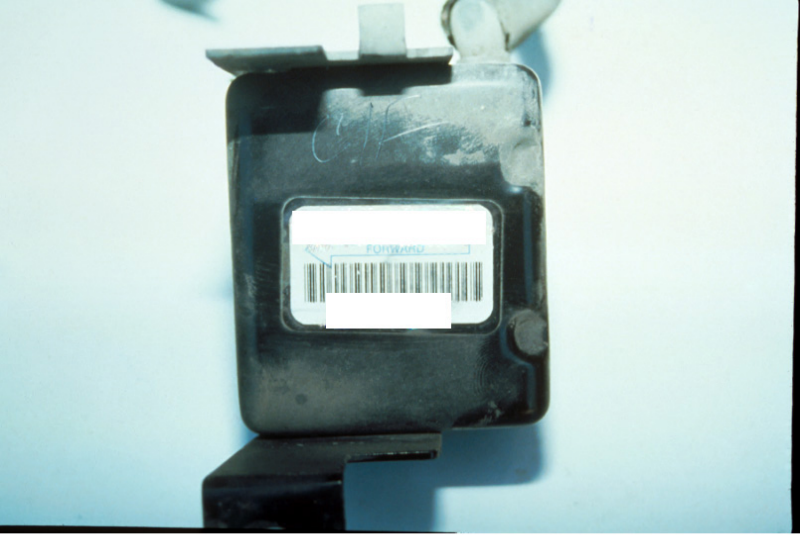

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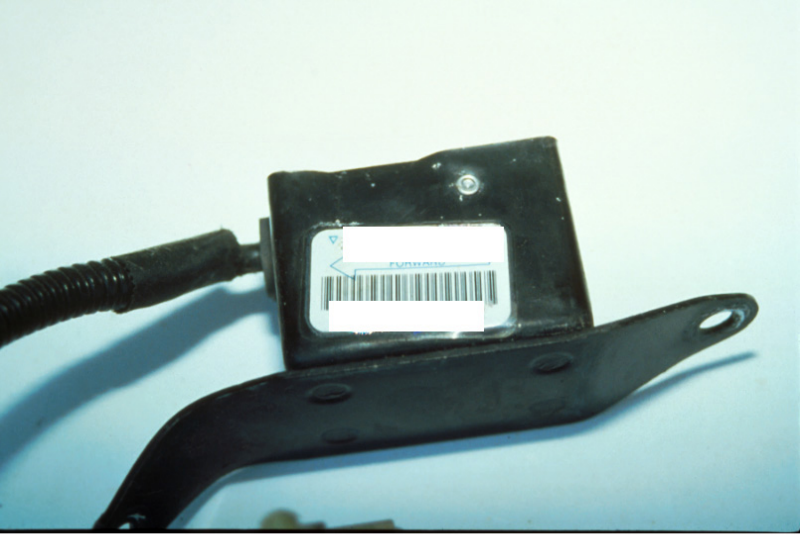
DS 9307 #61



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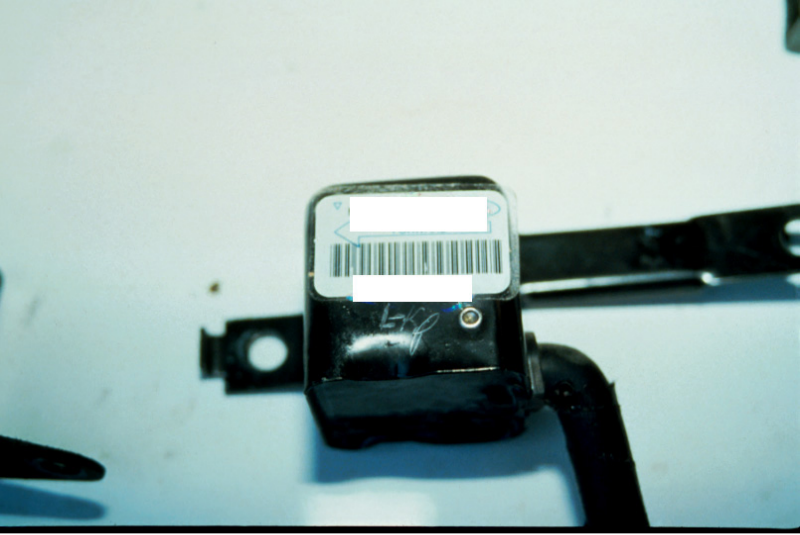
DS9307 #63

DS9307 #64



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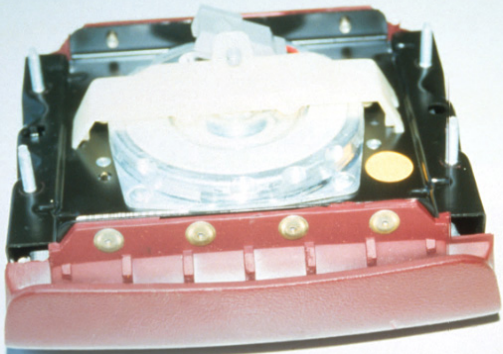
DS9307 #66



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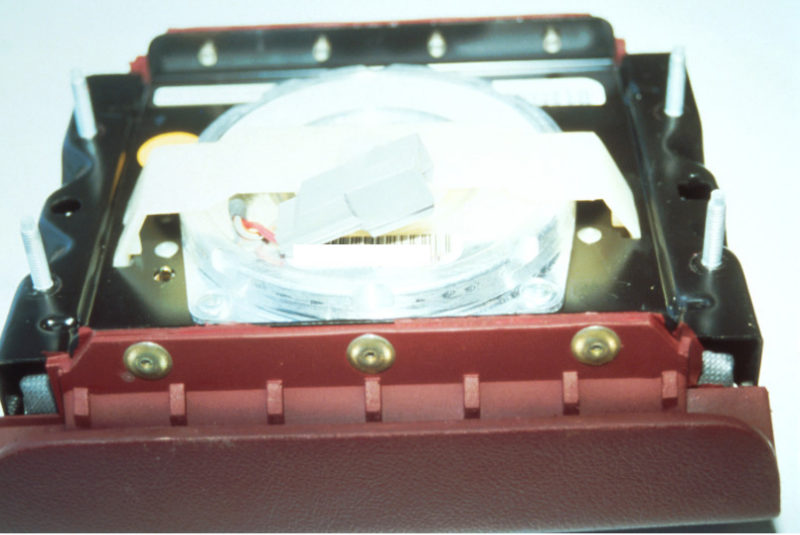

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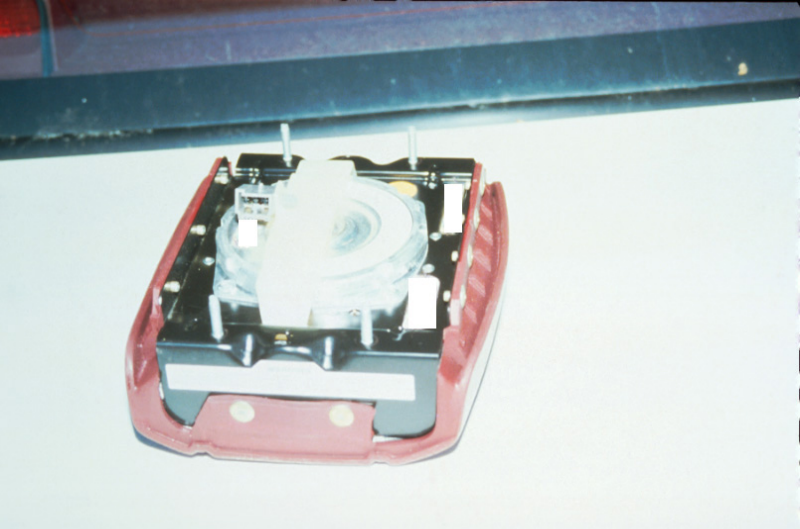

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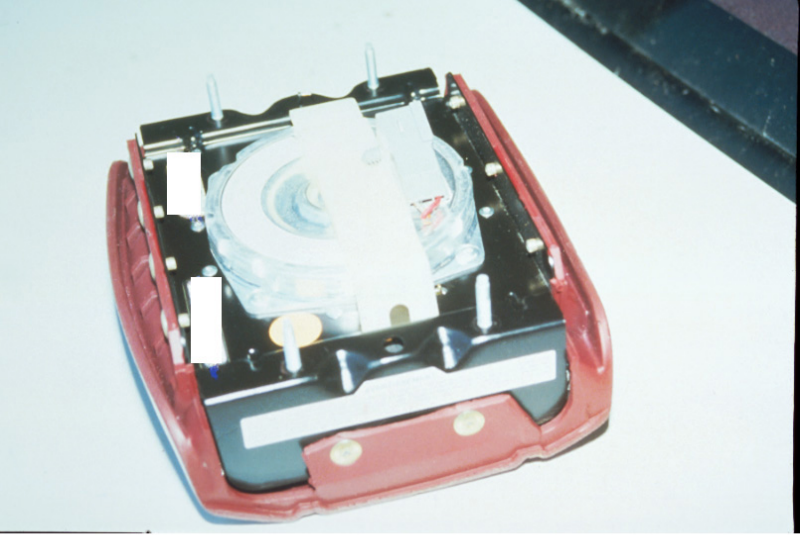

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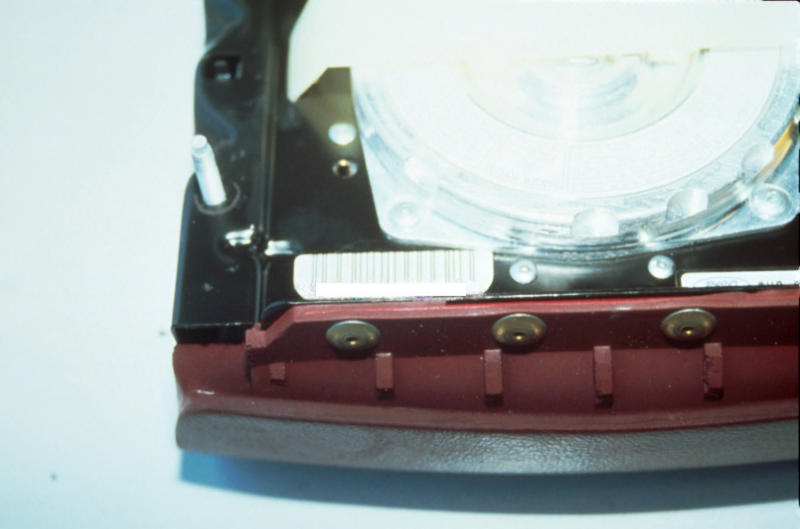

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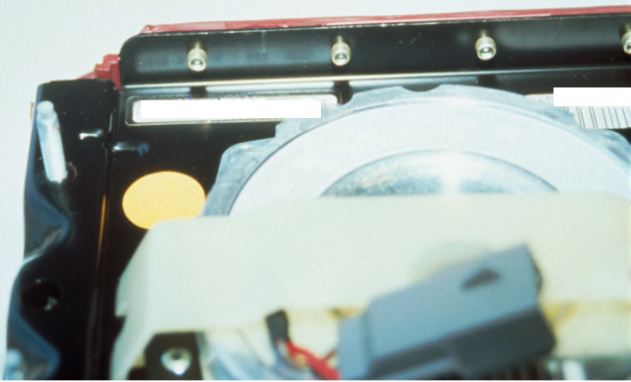
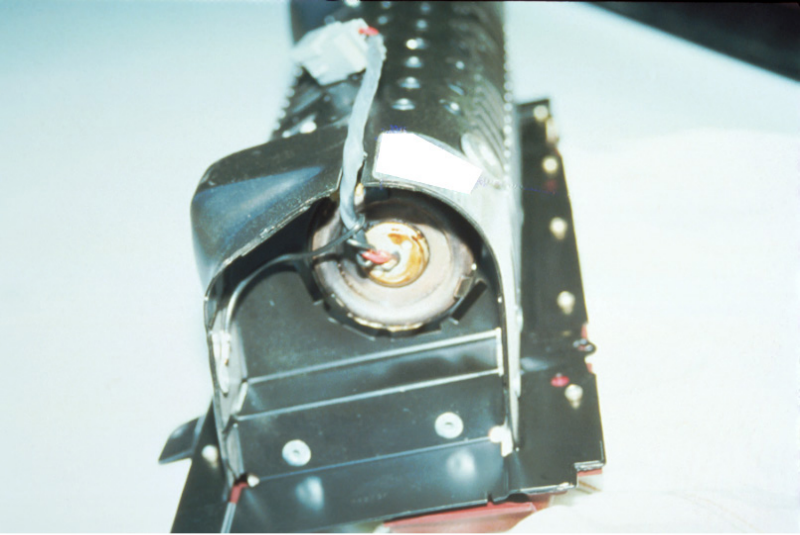


DS9307 #72

DS9307 #73



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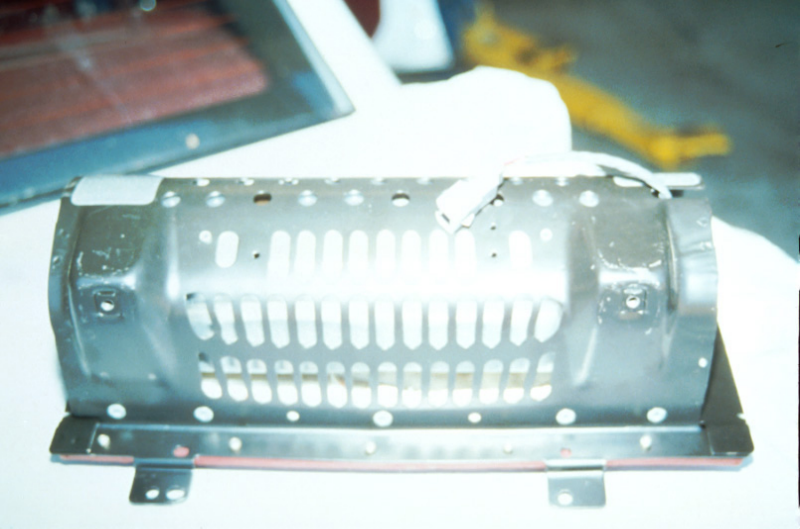

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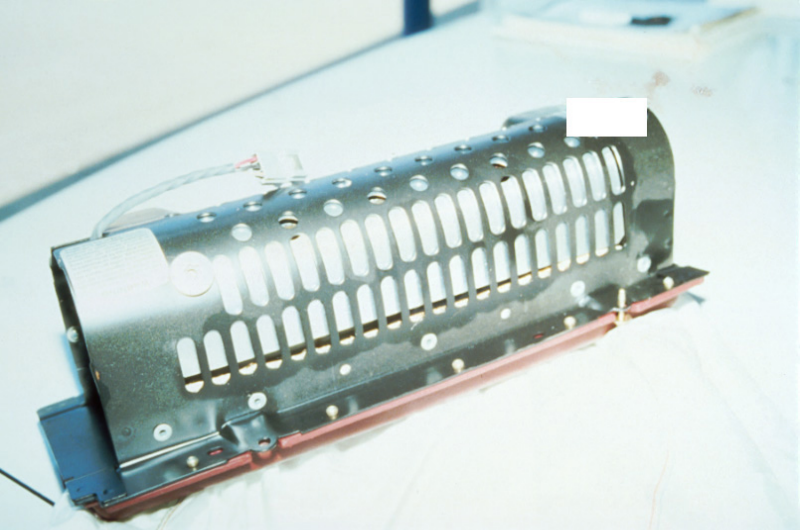
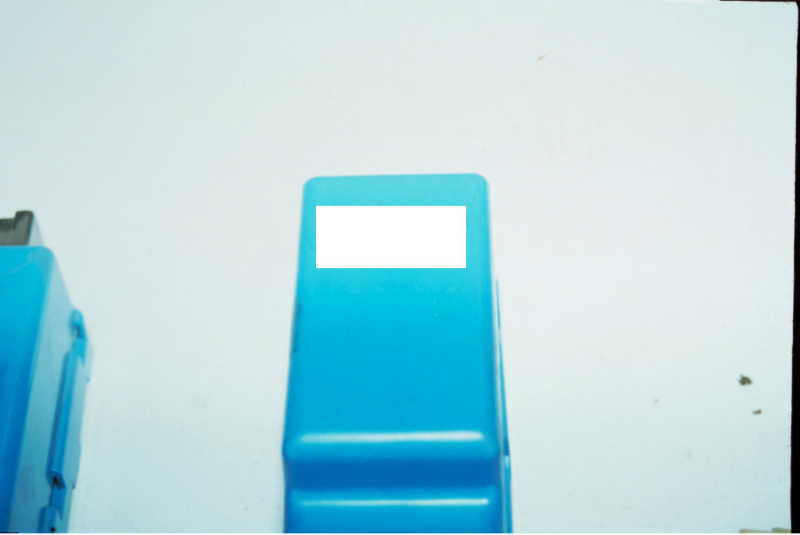


DS9307 #76

DS9307 #77



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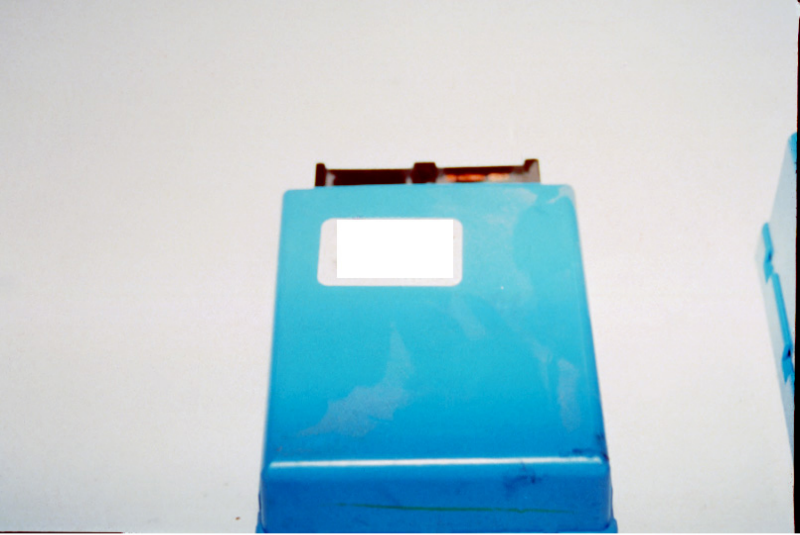
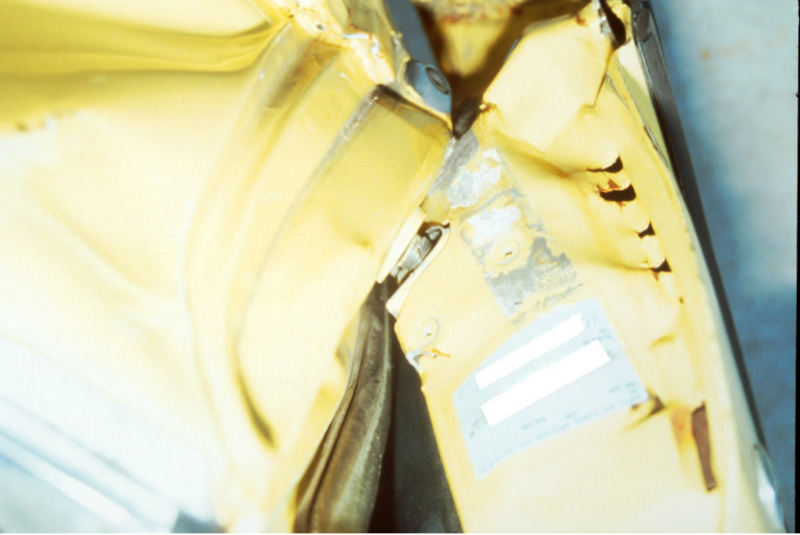


DS9307 #79

DS9307 #80



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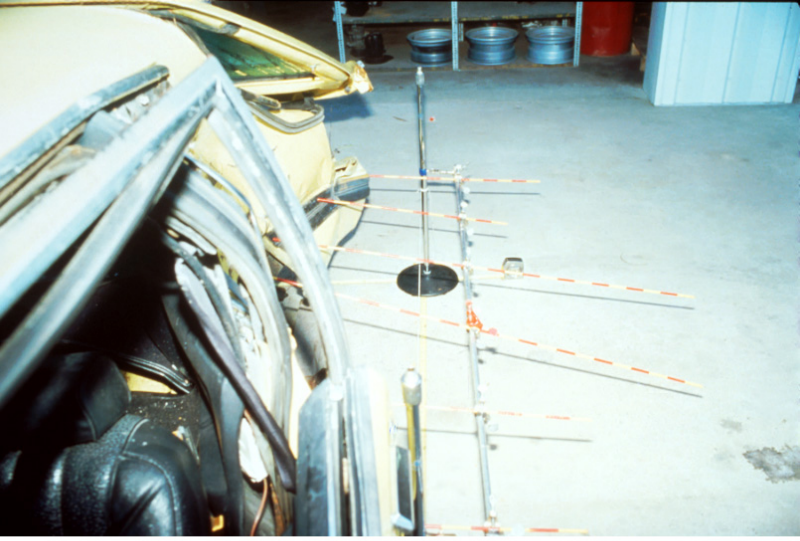
DS 9307 #82



DS 9307 #83
Best Available

DS9307 #84

DS 9307 #85
Best Available

DS 9307 #86
Best Available

DS 9307 #87
Best Available

DS9307 #88

DS 9307 #89
Best Available

DS9307 #90

DS9307 #91

DS 9307 #92

DS 9307 #93

DS 9307 #94

DS9307 #95

DS 9307 #96

DS 9307 #97

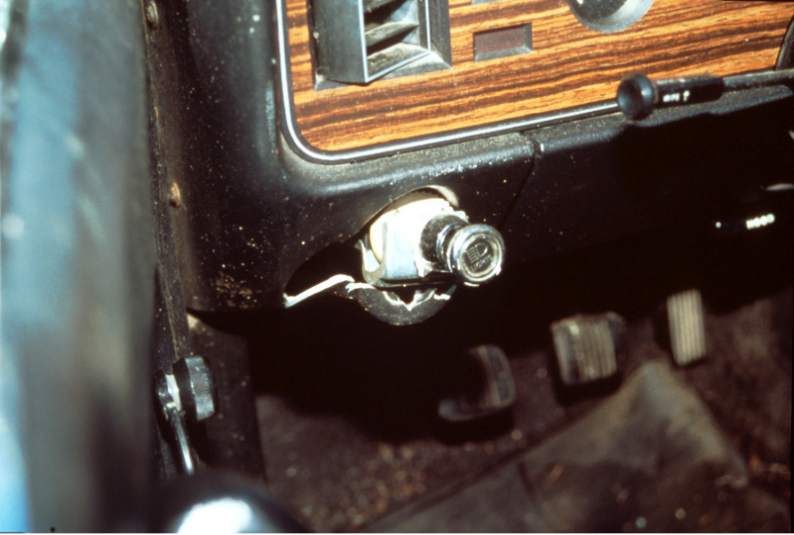
DS 9307 #98

DS9307 #99

DS9307 #100

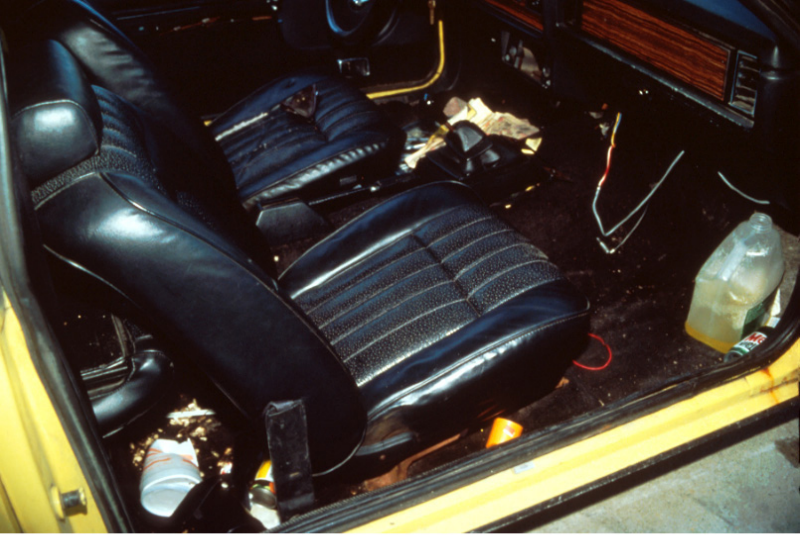
DS 9307 #101

DS9307 #102



DS9307 #103

DS 9307 #104



DS9307 #105

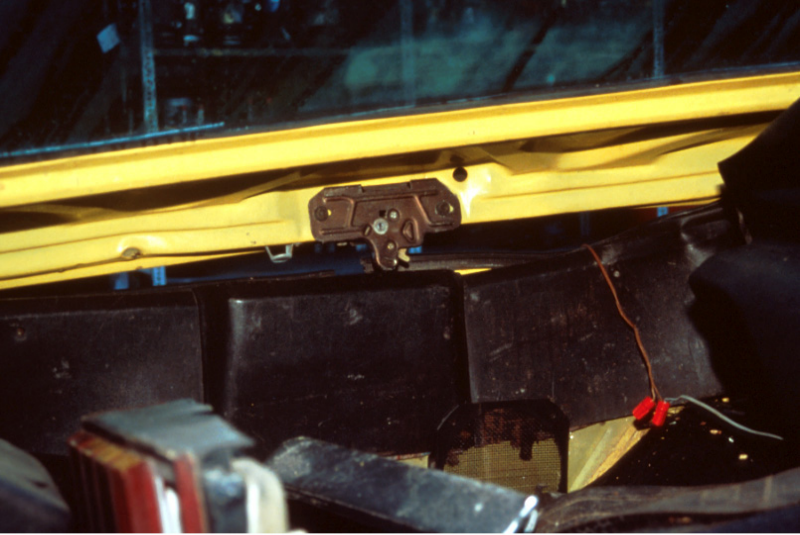
DS9307 #106

DS9307 #107

DS9307 #108

DS9307 #109

DS9307 #110



DS9307 #111

DS9307 #112

DS9307 #113

U.S. Department of Transportation

National Highway Traffic Safety Administration

ACCIDENT FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ____

2. Case Number - Stratum DSI-93-AB-007

IDENTIFICATION

3. Number of General Vehicle Forms Submitted 02

4. Date of Accident (Month,Day,Year) SPRING / WEEKDAY / 9 3

5. Time of Accident AFTERNOON

Code reported military time of accident.

NOTE: Midnight = 2400
Unknown = 9999

SPECIAL STUDIES - INDICATORS

Check (✓) each special study (SS14-SS18 below) that has been completed; code 1 for the checked special studies and 0 for the special studies not checked.

6. ___SS14 Fatal AOPS 0

7. ___SS15 Administrative Use 0

8. ___SS16 _____ 0

9. ___SS17 _____ 0

10. ___SS18 _____ 0

NUMBER OF EVENTS

11. Number of Recorded Events in This Accident 01

Code the number of events which occurred in this accident.

ACCIDENT EVENTS

For each event that occurred in the accident, code the lowest numbered vehicle in the left columns and the other involved vehicle or object on the right.

Accident Event Sequence Number	Vehicle Number	Class Of Vehicle	General Area of Damage	Vehicle Number or Object Contacted	Class Of Vehicle	General Area of Damage
12. 01	13. 01	14. 05	15. F	16. 02	17. 02	18. L
19. 02	20. ___	21. ___	22. ___	23. ___	24. ___	25. ___
26. 03	27. ___	28. ___	29. ___	30. ___	31. ___	32. ___
33. 04	34. ___	35. ___	36. ___	37. ___	38. ___	39. ___
40. 05	41. ___	42. ___	43. ___	44. ___	45. ___	46. ___

IF GREATER THAN FIVE EVENTS, CONTINUE CODING ON THE ACCIDENT EVENT SUPPLEMENT

CODES FOR CLASS OF VEHICLE

(00) Not a motor vehicle
(01) Subcompact/mini (wheelbase < 254 cm)
(02) Compact (wheelbase ≥ 254 but < 265 cm)
(03) Intermediate (wheelbase ≥ 265 but < 278 cm)
(04) Full size (wheelbase ≥ 278 but < 291 cm)
(05) Largest (wheelbase ≥ 291 cm)
(09) Unknown passenger car size
(11) Compact utility vehicle
(12) Large utility vehicle (≤ 4,500 kgs GVWR)
(13) Passenger van (≤ 4,500 kgs GVWR)
(14) Other van (≤ 4,500 kgs GVWR)
(15) Pickup truck (≤ 4,500 kgs GVWR)
(18) Other truck (≤ 4,500 kgs GVWR)
(19) Unknown light truck type
(20) School bus
(21) Other bus
(22) Truck (> 4,500 kgs GVWR)
(23) Tractor without trailer
(24) Tractor-trailer(s)
(25) Motored cycle
(28) Other vehicle
(99) Unknown

CODES FOR GENERAL AREA OF DAMAGE (GAD)

CDS APPLICABLE AND OTHER VEHICLES

(0) Not a motor vehicle
(N) Noncollision
(F) Front
(R) Right side
(L) Left side
(B) Back
(T) Top
(U) Undercarriage
(9) Unknown

TDC APPLICABLE VEHICLES

(0) Not a motor vehicle
(N) Noncollision
(F) Front
(R) Right side
(L) Left side
(B) Back of unit with cargo area (rear of trailer or straight truck)
(D) Back (rear of tractor)
(C) Rear of cab
(V) Front of cargo area
(T) Top
(U) Undercarriage
(9) Unknown

CODES FOR VEHICLE NUMBER OR OBJECT CONTACTED

(01-30) — Vehicle Number

Noncollision
(31) Overturn — rollover
(32) Fire or explosion
(33) Jackknife
(34) Other intraunit damage (specify):

_____

(35) Noncollision injury
(38) Other noncollision (specify):

_____

(39) Noncollision — details unknown

Collision With Fixed Object
(41) Tree (≤ 10 cm in diameter)
(42) Tree (> 10 cm in diameter)
(43) Shrubbery or bush
(44) Embankment

(45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post
(50) Pole or post (≤ 10 cm in diameter)
(51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
(52) Pole or post (> 30 cm in diameter)
(53) Pole or post (diameter unknown)

(54) Concrete traffic barrier
(55) Impact attenuator
(56) Other traffic barrier (includes guardrail) (specify):_____

(57) Fence
(58) Wall
(59) Building
(60) Ditch or culvert
(61) Ground
(62) Fire hydrant
(63) Curb
(64) Bridge
(68) Other fixed object (specify):

_____

(69) Unknown fixed object

Collision with Nonfixed Object
(71) Motor vehicle not in-transport
(72) Pedestrian
(73) Cyclist or cycle
(74) Other nonmotorist or conveyance

_____

(75) Vehicle occupant
(76) Animal
(77) Train
(78) Trailer, disconnected in transport
(88) Other nonfixed object (specify):

_____

(89) Unknown nonfixed object

(98) Other event (specify):

_____

(99) Unknown event or object

U.S. Department of Transportation

National Highway Traffic Safety Administration

GENERAL VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ____

2. Case Number - Stratum DSI-93-AB-007

3. Vehicle Number 01

VEHICLE IDENTIFICATION

4. Vehicle Model Year 90
Code the last two digits of the model year
(99) Unknown

5. Vehicle Make (specify): 13
LINCOLN
Applicable codes are found in your NASS Data Collection, Coding and Editing Manual.
(99) Unknown

6. Vehicle Model (specify): 001
TOWNCAR
Applicable codes are found in your NASS Data Collection, Coding and Editing Manual.
(999) Unknown

7. Body Type 04
Note: Applicable codes may be found on the back of this page.

8. Vehicle Identification Number

1 L N L M B 1 F 5 L Y * * * * * *

Left justify; Slash zeros and letter Z (0 and Z)
No VIN—Code all zeros
Unknown—Code all nine's

OFFICIAL RECORDS

9. Police Reported Vehicle Disposition 1
(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

10. Police Reported Travel Speed 072
Code to the nearest kph (NOTE: 000 means less than 0.5 kph)
(160) 159.5 kph and above
(999) Unknown

45 mph X 1.6093 = 072 kph

11. Police Reported Alcohol Presence 0
(0) No alcohol present
(1) Yes (alcohol present)
(7) Not reported
(8) No driver present
(9) Unknown

Note: See variables 37 through 55 (Page 4) for information on Other Drugs

12. Alcohol Test Result For Driver 96
Code actual value (decimal implied before first digit—0.xx)
(95) Test refused
(96) None given
(97) AC test performed, results unknown
(98) No driver present
(99) Unknown

Source: PAR

ACCIDENT RELATED

13. Speed Limit 080
(000) No statutory limit
Code posted or statutory speed limit in kph
(999) Unknown

50 mph X 1.6093 = 080 kph

14. Attempted Avoidance Maneuver 09
(00) No impact
(01) No avoidance actions
(02) Braking (no lockup)
(03) Braking (lockup)
(04) Braking (lockup unknown)
(05) Releasing brakes
(06) Steering left
(07) Steering right
(08) Braking and steering left
(09) Braking and steering right
(10) Accelerating
(11) Accelerating and steering left
(12) Accelerating and steering right
(97) No driver present
(98) Other action (specify): _____
(99) Unknown

15. Accident Type 65
Applicable codes may be found on the back of page two of this field form
(00) No impact
Code the number of the diagram that best describes the accident circumstance
(98) Other accident type (specify): _____
(99) Unknown

****** SKIP TO VARIABLE GV37 IF GV07 DOES NOT EQUAL 01-49 ******

CODES FOR BODY TYPE

BEST AVAILABLE COPY

CDS APPLICABLE VEHICLES

Automobiles

(01) Convertible (excludes sun-roof, t-bar)
(02) 2-door sedan, hardtop, coupe
(03) 3-door/2-door hatchback
(04) 4-door sedan, hardtop
(05) 5-door/4-door hatchback
(06) Station wagon (excluding van and truck based)
(07) Hatchback, number of doors unknown
(08) Other automobile type (specify):

_____

(09) Unknown automobile type

Automobile Derivatives

(10) Auto based pickup (includes El Camino, Caballero, Ranchero, Brat, and Rabbit pickup)
(11) Auto based panel (cargo station wagon, auto based ambulance/hearse)
(12) Large limousine - more than four side doors or stretched chassis
(13) Three-wheel automobile or automobile derivative

Utility Vehicles (≤ 4,500 kgs GVWR)

(14) Compact utility (Jeep CJ-2 - CJ-7, Scrambler, Golden Eagle, Renegade, Laredo, Wrangler, Cherokee [84 and after], Dispatcher, Raider, Bronco II, Bronco [76 and before], Explorer, S-10 Blazer, Geo Tracker, Bravada, S-15 Jimmy, Thing, Pathfinder, Trooper, Trooper II, Rodeo, Amigo, Navajo, 4-Runner, Montero, Samurai, Sidekick, Rocky)
(15) Large utility (includes Jeep Cherokee [83 and before], Ramcharger, Trailduster, Bronco-fullsize [78 and after], fullsize Blazer, fullsize Jimmy, Landcruiser, Rover, Scout)
(16) Utility station wagon (Chevy Suburban, GMC Suburban, Travelall, Grand Wagoneer, includes suburban limousine)
(19) Utility, unknown body type

Van Based Light Trucks (≤ 4,500 kgs GVWR)

(20) Minivan (Chrysler Town and Country, Caravan, Grand Caravan, Voyager, Grand Voyager, Mini-Ram, Dodge/Plymouth Vista, Aerostar, Villager, Lumina APV, Trans Sport, Silhouette, Astro, Safari, Toyota Van, Toyota Minivan, Previa, Nissan Minivan, Quest, Mitsubishi Minivan, Vanagon/Camper.)
(21) Large van (B150-B350, Sportsman, Royal, Maxiwagon, Ram, Tradesman, Voyager [83 and before], E150-E350, Econoline, Clubwagon, Chateau, G10-G30, Chevy Van, Beauville, Sport Van, G15-G35, Rally Van, Vandura.)
(22) Step van or walk-in van (≤ 4,500 kgs GVWR)
(23) Van based motorhome (≤ 4,500 kgs GVWR)
(24) Van based school bus (≤ 4,500 kgs GVWR)
(25) Van based other bus (≤ 4,500 kgs GVWR)
(28) Other van type (Hi-Cube Van, Kary) (specify):

_____

(29) Unknown van type

Light Conventional Trucks (Pickup style cab, ≤ 4,500 kgs GVWR)

(30) Compact pickup (D50, Colt P/U, Ram 50, Dakota, Arrow Pickup [foreign], Ranger, Courier, S-10 , T-10, LUV, S-15, T-15, Sonoma, Datsun/Nissan Pickup, P'up, Mazda Pickup, Toyota Pickup, Mitsubishi Pickup)
(31) Large Pickup (Jeep Pickup, Comanche, Ram Pickup, D100-D350, W100-W350, F100-F350, C10-C35, K10-K35, R10-R35, V10-V35, Silverado, Sierra, R100-R500,)
(32) Pickup with slide-in camper
(33) Convertible pickup
(39) Unknown pickup style light conventional truck type

Other Light Trucks (≤ 4,500 kgs GVWR)

(40) Cab chassis based (includes rescue vehicles, light stake, dump, and tow truck)
(41) Truck based panel
(42) Light truck based motorhome (chassis mounted)
(45) Other light conventional truck type
(48) Unknown light truck type
(49) Unknown light vehicle type (automobile, utility, van, or light truck)

OTHER VEHICLES

Buses (Excludes Van Based)

(50) School bus (designed to carry students, not cross country or transit)
(58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify):

_____

(59) Unknown bus type

Medium/Heavy Trucks (> 4,500 kgs GVWR)

(60) Step van (> 4,500 kgs GVWR)
(61) Single unit straight truck (4,500 kgs < GVWR ≤ 8,850 kgs)
(62) Single unit straight truck (8,850 kgs < GVWR ≤ 12,000 kgs)
(63) Single unit straight truck (> 12,000 kgs GVWR)
(64) Single unit straight truck, GVWR unknown
(65) Medium/heavy truck based motorhome
(67) Truck-tractor with no cargo trailer
(68) Truck-tractor pulling one trailer
(69) Truck-tractor pulling two or more trailers
(70) Truck-tractor (unknown if pulling trailer)
(78) Unknown medium/heavy truck type
(79) Unknown truck type (light/medium/heavy)

Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

(80) Motorcycle
(81) Moped (motorized bicycle)
(82) Three-wheel motorcycle or moped
(88) Other motored cycle (minibike, motorscooter) (specify):_____
(89) Unknown motored cycle type

Other Vehicles

(90) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
(91) Snowmobile
(92) Farm equipment other than trucks
(93) Construction equipment other than trucks
(97) Other vehicle type
(99) Unknown body type

OCCUPANT RELATED

16. Driver Presence in Vehicle — 1
(0) Driver not present
(1) Driver present
(9) Unknown

17. Number of Occupants This Vehicle — 0 2
(00-96) Code actual number of occupants for this vehicle
(97) 97 or more
(99) Unknown

18. Number of Occupant Forms Submitted — 0 2

VEHICLE WEIGHT ITEMS

19. Vehicle Curb Weight — 1,8 3 0
____Code weight to nearest 10 kilograms.
(045) Less than 450 kilograms
(610) 6,100 kilograms or more
(999) Unknown

0 4,0 2 5 lbs X .4536 = 1,8 2 6 kgs

Source: [redacted]

20. Vehicle Cargo Weight — 0, 0 0 0
____Code weight to nearest 10 kilograms.
(000) Less than 5 kilograms
(450) 4,500 kilograms or more
(999) Unknown

__ __,__ __ __ lbs X .4536 = __,__ __ __ kgs

RECONSTRUCTION DATA

21. Towed Trailing Unit — 0
(0) No towed unit
(1) Yes—towed trailing unit
(9) Unknown

22. Documentation of Trajectory Data for This Vehicle — 0
(0) No
(1) Yes

23. Post Collision Condition of Tree or Pole (For Highest Delta V) — 0
(0) Not collision (for highest delta V) with tree or pole
(1) Not damaged
(2) Cracked/sheared
(3) Tilted <45 degrees
(4) Tilted ≥45 degrees
(5) Uprooted tree
(6) Separated pole from base
(7) Pole replaced
(8) Other (specify):

(9) Unknown

24. Rollover — 0
(0) No rollover (no overturning)

Rollover (primarily about the longitudinal axis)
(1) Rollover, 1 quarter turn only
(2) Rollover, 2 quarter turns
(3) Rollover, 3 quarter turns
(4) Rollover, 4 or more quarter turns (specify):

(5) Rollover--end-over-end (i.e., primarily about the lateral axis)
(9) Rollover (overturn), details unknown

OVERRIDE/UNDERRIDE (THIS VEHICLE)

25. Front Override/Underride (this Vehicle) — 0

26. Rear Override/Underride (this Vehicle) — 0

(0) No override/underride, or not an end-to-end impact

Override (see specific CDC)
(1) 1st CDC
(2) 2nd CDC
(3) Other not automated CDC (specify):

Underride (see specific CDC)
(4) 1st CDC
(5) 2nd CDC
(6) Other not automated CDC (specify):

(7) Medium/heavy truck or bus override
(9) Unknown

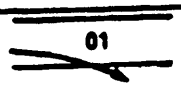
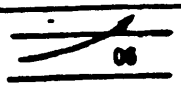
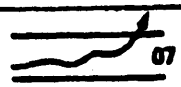
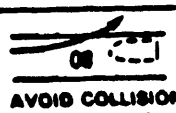
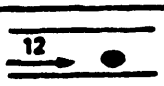
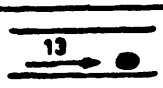
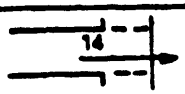
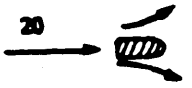
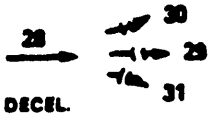
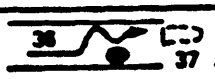
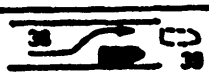
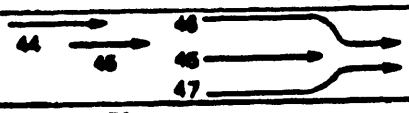
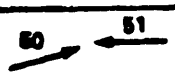
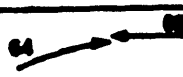
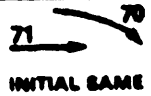
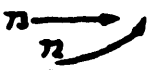
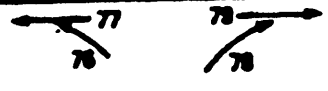
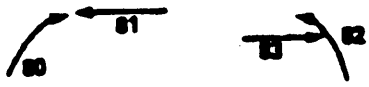
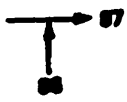
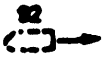
HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

Values: (000)-(359) Code actual value
(997) Noncollision
(998) Impact with object
(999) Unknown

27. Heading Angle For This Vehicle — 2 1 3

28. Heading Angle For Other Vehicle — 1 1 3

BEST AVAILABLE COPY

Category	Configuration	ACCIDENT TYPES (Includes Intent)				
I Single Driver	A Right Roadside Departure	 01 DRIVE OFF ROAD	02 CONTROL/ TRACTION LOSS	03 AVOID COLLISION WITH VEH., PED., ANIM.	04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN
	B Left Roadside Departure	 06 DRIVE OFF ROAD	 07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH., PED., ANIM.	09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN
	C Forward Impact	11 PARKED VEH.	 12 STA. OBJECT	 13 PEDESTRIAN/ ANIMAL	 14 END DEPARTURE	15 SPECIFICS OTHER	16 SPECIFICS UNKNOWN
II Same Trafficway Same Direction	D Rear-End	 20 22 21 23 STOPPED 21, 22, 23	24 26 25 27 SLOWER 25, 26, 27	 28 30 29 31 DECEL. 28, 29, 31	(EACH • 32) SPECIFICS OTHER	(EACH • 33) SPECIFICS UNKNOWN
	E Forward Impact	34 35 CONTROL/ TRACTION LOSS	 36 37 CONTROL/ TRACTION LOSS	 38 39 AVOID COLLISION WITH VEH.	40 41 AVOID COLLISION WITH OBJECT	(EACH • 42) SPECIFICS OTHER	(EACH • 43) SPECIFICS UNKNOWN
	F Sideswipe Angle	 44 45 46 45 47			(EACH • 48) SPECIFICS OTHER	(EACH • 49) SPECIFICS UNKNOWN	
III Same Trafficway Opposite Direction	G Head-On	 50 51 LATERAL MOVE			(EACH • 52) SPECIFICS OTHER	(EACH • 53) SPECIFICS UNKNOWN	
	H Forward Impact	54 55 CONTROL/ TRACTION LOSS	56 57 CONTROL/ TRACTION LOSS	58 59 AVOID COLLISION WITH VEH.	60 61 AVOID COLLISION WITH OBJECT	(EACH • 62) SPECIFICS OTHER	(EACH • 63) SPECIFICS UNKNOWN
	I Sideswipe Angle	 64 65 LATERAL MOVE			(EACH • 66) SPECIFICS OTHER	(EACH • 67) SPECIFICS UNKNOWN	
IV Change Trafficway Vehicle Turning	J. Turn Across Path	68 69 INITIAL OPPOSITE DIRECTIONS	 70 71 INITIAL SAME DIRECTIONS	 72 73		(EACH • 74) SPECIFICS OTHER	(EACH • 75) SPECIFICS UNKNOWN
	K. Turn Into Path	 76 77 TURN INTO SAME DIRECTION	78 79	 80 81 TURN INTO OPPOSITE DIRECTIONS	82 83	(EACH • 84) SPECIFICS OTHER	(EACH • 85) SPECIFICS UNKNOWN
V Intersecting Paths (Vehicle Damage)	L. Straight Paths	 87 86	88 89		(EACH • 90) SPECIFICS OTHER	(EACH • 91) SPECIFICS UNKNOWN	
VI Miscellaneous	M. Backing Etc.	 92 BACKING VEH.	93 OTHER VEH. OR OBJECT		98 Other Accident Type 99 Unknown Accident Type 00 No Impact		

29. Basis for Total Delta V (highest) 1

Delta V Calculated
(1) CRASH program—damage only routine
(2) CRASH program—damage and trajectory routine
(3) Missing vehicle algorithm

Delta V Not Calculated
(4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
(5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction technique, regardless of adequacy of damage data.
(6) All vehicle and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

COMPUTER GENERATED DELTA V

	Secondary	Highest
30. Total Delta V	Ø	16

16.3 Nearest kph (10.1 mph)
(NOTE: 000 means less than 0.5 kph)
(160) 159.5 kph and above
(999) Unknown

31. Longitudinal Component of Delta V: Secondary + (−) Ø; Highest 16

−16.Ø Nearest kph (−10.Ø mph)
(NOTE: __000 means greater than −0.5 kph and less than +0.5 kph)
(±160) ±159.5 kph and above
(__999) Unknown

	Secondary	Highest
32. Lateral Component of Delta V	− Ø Ø	3

2.8 Nearest kph (1.8 mph)
(NOTE: __000 means greater than −0.5 kph and less than +0.5 kph)
(±160) ±159.5 kph and above
(__999) Unknown

33. Energy Absorption ØØ3 5, Ø00

34952.7 Nearest 100 joules (25776.4 ft-lb)
(NOTE: 0000 means less than 50 joules)
(9997) 999,650 joules or more
(9999) Unknown

34. Confidence In Reconstruction Program Results (For Highest Delta V) 1
(0) No reconstruction
(1) Collision fits model — results appear reasonable
(2) Collision fits model — results appear high
(3) Collision fits model — results appear low
(4) Borderline reconstruction — results appear reasonable

35. Type of Vehicle Inspection 1
(0) No inspection
(1) Complete inspection
(2) Partial inspection (specify): _____

36. Is this an AOPS Vehicle? 1
(0) No
(1) Yes - researcher determined
(2) VIN determined air bag system
(3) VIN determined automatic (passive) belts
(4) VIN determined air bag and automatic (passive) belts

IS OLDMISS APPLICABLE FOR THIS VEHICLE? [ ] YES [X] NO

IF YES: IS A COMPLETED OLDMISS PROGRAM SUMMARY INCLUDED? [ ] YES [ ] NO

37. Police Reported Other Drug Presence ∅
(0) No other drugs present
(1) Yes (other drug present)
(7) Not reported
(8) No driver present
(9) Unknown

38. Police Reported Drug Evaluation Classification (DEC) Test For Driver ∅
(0) No DEC process available or given
(1) DEC process given, results known
(2) DEC process given, results unknown
(3) DEC process available, unknown if given
(8) No driver present

39. Other Drug Specimen Test Type For Driver ∅
(0) No specimen test given
(1) Blood test
(2) Urine test
(3) Other specimen tests (specify): _____
(7) Unspecified specimen test
(8) No driver present
(9) Unknown if specimen test given

DRUG EVALUATION CLASSIFICATION
OTHER DRUGS TEST RESULTS FOR DRIVER

	DEC Test Results	Specimen Test Results
Narcotic Drug	40. ∅	41. ∅
Depressant Drug	42. ∅	43. ∅
Stimulant Drug	44. ∅	45. ∅
Hallucinogen Drug	46. ∅	47. ∅
Cannabinoid Drug	48. ∅	49. ∅
Phencyclidine (PCP)	50. ∅	51. ∅
Inhalant Drug	52. ∅	53. ∅
Other Drug (Excluding Nicotine, Aspirin, Alcohol, Drugs Administered Post-Crash)	54. ∅	55. ∅

Codes For DEC Test Results

(0) No DEC test given
(1) Passed DEC test
(2) Failed DEC test
(3) DEC test given—results unknown
(8) No driver present
(9) Unknown if DEC test given

Codes for Specimen Test Results

(0) No specimen test given
(1) Drug not found in specimen
(2) Drug found in specimen
(7) Specimen test given, results unknown or not obtained
(8) No driver present
(9) Unknown if specimen test given

OTHER DATA

56. Driver's Zip Code [redacted]

(00000) Driver not present
(00001) Driver not a resident of U.S. or territories
_____ Code actual 5-digit zip code
(99999) Unknown

57. Driver's Race/Ethnic Origin 1
(0) Driver not present
(1) White (non-Hispanic)
(2) Black (non-Hispanic)
(3) White (Hispanic)
(4) Black (Hispanic)
(5) American Indian, Eskimo or Aleut
(6) Asian or Pacific Islander
(8) Other (specify): _____
(9) Unknown

58. Vehicle Special Use (This Trip) 0
(0) No special use
(1) Taxi
(2) Vehicle used as school bus
(3) Vehicle used as other bus
(4) Military
(5) Police
(6) Ambulance
(7) Fire truck or car
(8) Other (specify): _____
(9) Unknown

ROLLOVER DATA

If GV07 (Body Type) ≠ 1-49, leave GV59-GV63 blank.
If GV24 (Rollover) = 0, then GV59-GV63 must equal 0.
If GV24 = 9, then GV59-GV63 must equal 9.

59. Rollover Initiation Type 0
(0) No rollover
(1) Trip-over
(2) Flip-over
(3) Turn-over
(4) Climb-over
(5) Fall-over
(6) Bounce-over
(7) Collision with another vehicle
(8) Other rollover initiation type specify): _____
(9) Unknown rollover initiation type

60. Location of Rollover Initiation 0
(0) No rollover
(1) On roadway
(2) On shoulder—paved
(3) On shoulder—unpaved
(4) On roadside or divided trafficway median
(9) Unknown

61. Rollover Initiation Object Contacted 0 0

62. Location on Vehicle Where Initial Principal Tripping Force Is Applied 0
(0) No rollover
(1) Wheels/tires
(2) Side plane
(3) End plane
(4) Undercarriage
(5) Other location on vehicle (specify): _____
(8) Non-contact rollover forces (specify): _____
(9) Unknown

63. Direction of Initial Roll 0
(0) No rollover
(1) Roll right - primarily about the longitudinal axis
(2) Roll left - primarily about the longitudinal axis
(5) End-over-end (i.e., primarily about the lateral axis)
(9) Unknown roll direction

PRECRASH DATA

64. Pre-Event Movement (Prior to Recognition of Critical Event) 0 1
(01) Going straight
(02) Slowing or stopping in traffic lane
(03) Starting in traffic lane
(04) Stopped in traffic lane
(05) Passing or overtaking another vehicle
(06) Disabled or parked in travel lane
(07) Leaving a parking position
(08) Entering a parking position
(09) Turning right
(10) Turning left
(11) Making a U-turn
(12) Backing up (other than for parking position)
(13) Negotiating a curve
(14) Changing lanes
(15) Merging
(16) Successful avoidance maneuver to a previous critical event
(97) Other (specify): _____
(98) No driver present
(99) Unknown

CODES FOR ROLLOVER INITIATION OBJECT CONTACTED

(00) No rollover
(01-30) — Vehicle Number

Noncollision
(31) Turn-over — fall-over
(33) Jackknife

Collision With Fixed Object
(41) Tree (≤ 10 cm in diameter)
(42) Tree (> 10 cm in diameter)
(43) Shrubbery or bush
(44) Embankment

(45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post
(50) Pole or post (≤ 10 cm in diameter)
(51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
(52) Pole or post (> 30 cm in diameter)
(53) Pole or post (diameter unknown)

(54) Concrete traffic barrier
(55) Impact attenuator
(56) Other traffic barrier (includes guardrail) (specify):_____

(57) Fence
(58) Wall
(59) Building
(60) Ditch or culvert
(61) Ground
(62) Fire hydrant
(63) Curb
(64) Bridge
(68) Other fixed object (specify):

_____
(69) Unknown fixed object

Collision with Nonfixed Object
(71) Motor vehicle not in-transport
(76) Animal
(77) Train
(78) Trailer, disconnected in transport
(88) Other nonfixed object (specify):

_____
(89) Unknown nonfixed object

(98) Other event (specify):

_____
(99) Unknown event or object

PRECRASH DATA (Continued)

65. Critical Precrash Event 6 2

This Vehicle Loss of Control Due To:
(01) Blow out or flat tire
(02) Stalled engine
(03) Disabling vehicle failure (e.g., wheel fell off) (specify): _____
(04) Non-disabling vehicle problem (e.g., hood flew up) (specify): _____
(05) Poor road conditions (puddle, pot hole, ice, etc.) (specify): _____
(06) Traveling too fast for conditions
(08) Other cause of control loss (specify): _____
(09) Unknown cause of control loss

This Vehicle Traveling
(10) Over the lane line on left side of travel lane
(11) Over the lane line on right side of travel lane
(12) Off the edge of the road on the left side
(13) Off the edge of the road on the right side
(14) End departure
(15) Turning left at intersection
(16) Turning right at intersection
(17) Crossing over (passing through) intersection
(19) Unknown travel direction

Other Motor Vehicle In Lane
(50) Stopped
(51) Traveling in same direction with lower speed (i.e., lower steady speed or decelerating)
(52) Traveling in same direction with higher speed
(53) Traveling in opposite direction
(54) In crossover
(55) Backing
(59) Unknown travel direction of other motor vehicle in lane

Other Motor Vehicle Encroaching Into Lane
(60) From adjacent lane (same direction)—over left lane line
(61) From adjacent lane (same direction)—over right lane line
(62) From opposite direction—over left lane line
(63) From opposite direction—over right lane line
(64) From parking lane
(65) From crossing street, turning into same direction
(66) From crossing street, across path
(67) From crossing street, turning into opposite direction
(68) From crossing street, intended path not known
(70) From driveway, turning into same direction
(71) From driveway, across path
(72) From driveway, turning into opposite direction
(73) From driveway, intended path not known
(74) From entrance to limited access highway
(78) Encroachment by other vehicle—details unknown

Pedestrian or Pedalcyclist, or Other Nonmotorist
(80) Pedestrian in roadway
(81) Pedestrian approaching roadway
(82) Pedestrian - unknown location
(83) Pedalcyclist or other nonmotorist in roadway (specify): _____
(84) Pedalcyclist or other nonmotorist approaching roadway (specify): _____
(85) Pedalcyclist or other nonmotorist—unknown location (specify): _____

Object or Animal
(87) Animal in roadway
(88) Animal approaching roadway
(89) Animal—unknown location
(90) Object in roadway
(91) Object approaching roadway
(92) Object—unknown location

(98) Other critical precrash event (specify): _____
(99) Unknown

For Corrective Actions Attempted see variable GV14 (Attemped Avoidance Manuever)

66. Precrash Stability After Avoidance Maneuver 2
(0) No avoidance maneuver
(1) Tracking
(2) Skidding longitudinally—rotation less than 30 degrees
(3) Skidding laterally—clockwise rotation
(4) Skidding laterally—counterclockwise rotation
(7) Other vehicle loss-of-control (specify): _____
(8) No driver present
(9) Precrash stability unknown

67. Precrash Directional Consequences of Avoidance Maneuver (Corrective Action) 1
(0) No avoidance maneuver
(1) Vehicle stayed in travel lane where avoidance maneuver was initiated
(2) Vehicle stayed on roadway but left travel lane where avoidance maneuver was initiated
(3) Vehicle stayed on roadway, not known if left travel lane where avoidance maneuver was initiated
(4) Vehicle departed roadway
(5) Avoidance maneuver initiated off roadway
(8) No driver present
(9) Directional consequences unknown

***** IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35=0), *****
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS.

***** IF GV07 DOES NOT EQUAL 01-49, DO NOT COMPLETE *****
THE EXTERIOR VEHICLE, INTERIOR VEHICLE,
OCCUPANT ASSESSMENT, AND OCCUPANT INJURY FORMS.

U.S. Department of Transportation
National Highway Traffic Safety Administration

EXTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ____
2. Case Number - Stratum DSI-93-AB-007
3. Vehicle Number 01

VEHICLE IDENTIFICATION

VIN 1LNLMB1F5LY****** Model Year 90

Vehicle Make (specify): LINCOLN Vehicle Model (specify): TOWN CAR

LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L
01	BEGINS LEFT FRONT BUMPER CORNER	FULL FRONTAL

CRUSH PROFILE IN CENTIMETERS

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure and document on the vehicle diagram the location of maximum crush.

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

Specific Impact Number	Plane of Impact C-Measurements	Direct Damage		Field L	C_1	C_2	C_3	C_4	C_5	C_6	±D
		Width (CDC)	Max Crush								
01	FRONT BUMPER	175	27	161	27	15	09	07	08	17	0
	+ FACIA TO BUMPER BEAM		13		13	12	11	0	0	0	
	TOTAL		40		40	27	20	07	08	17	
	− FREE SPACE		08		08	03	0	0	03	08	
	RESULTANT		32		32	24	20	07	05	09	
			@ C_1								
				U.S. EQUIVALENT							
01	FRONT BUMPER	69.0 in	10.6 in	63.5 in	10.6 in	6.0 in	3.6 in	2.7 in	3.2 in	6.6 in	0
	+ FACIA TO BUMPER BEAM		5.0 in		5.0 in	4.7 in	4.4 in	0	0	0	
	TOTAL		15.6 in		15.6 in	10.7 in	8.0 in	2.7 in	3.2 in	6.6 in	
	− FREE SPACE		3.0 in		3.0 in	1.0 in	0	0	1.0 in	3.0 in	
	RESULTANT		12.6 in		12.6 in	9.7 in	8.0 in	2.7 in	2.2 in	3.6 in	
			@ C_1								

ORIGINAL SPECIFICATIONS WORK SHEET

Wheelbase	117.4	inches	x 2.54	=	298 cm
Overall Length	220.2	inches	x 2.54	=	559 cm
Maximum Width	078.1	inches	x 2.54	=	198 cm
Curb Weight	04,025	pounds	x .4536	=	1,826 kg
Average Track	063.1	inches	x 2.54	=	160 cm
Front Overhang	045.1	inches	x 2.54	=	115 cm
Rear Overhang	057.7	inches	x 2.54	=	147 cm
Undeformed End Width	069.0	inches	x 2.54	=	175 cm
Engine Size: cyl./displ.	5000	cc	x .001	=	5.0 L
	305	CID	x .0164	=	5.0 L

VEHICLE DAMAGE SKETCH

TIRE–WHEEL DAMAGE

a. Rotation physically restricted

RF 2
LF 2
RR 2
LR 2

b. Tire deflated

RF 2
LF 2
RR 2
LR 2

(1) Yes (2) No (8) NA (9) Unk.

TYPE OF TRANSMISSION

☐ Manual ☒ Automatic

ORIGINAL SPECIFICATIONS

Wheelbase	298	cm
Overall Length	559	cm
Maximum Width	198	cm
Curb Weight	1826	kg
Average Track	160	cm
Front Overhang	115	cm
Rear Overhang	147	cm
Undeformed End Width	175	cm
Engine Size: cyl./displ.	V8/5.0	L

WHEEL STEER ANGLES
(For locked front wheels or displaced rear axles only)

RF ± — °
LF ± — °
RR ± — °
LR ± — °

Within ± 5 degrees

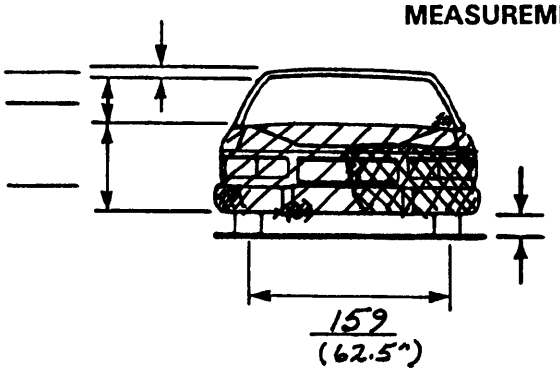
DRIVE WHEELS

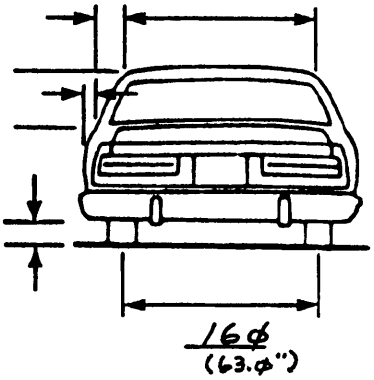
☐ FWD ☒ RWD ☐ 4WD

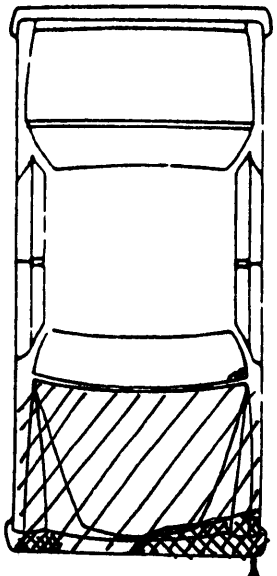
Approximate Cargo Weight 0 kg

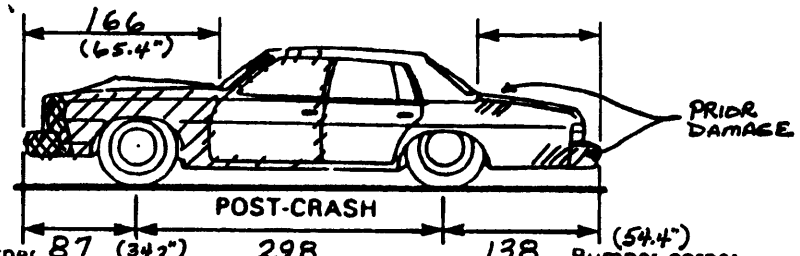
GAUGE STANDS AOL

MEASUREMENTS IN CENTIMETERS

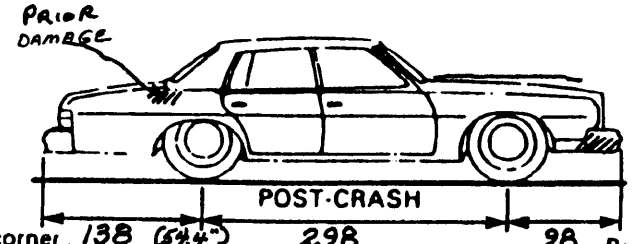








Bumper corner 87 (34.2") 298 (117.4") 138 (54.4") Bumper corner
Stringline 115 (45.4") 146 (57.4") Stringline



Bumper corner 138 (54.4") 298 (117.4") 98 (38.4") Bumper corner
Stringline 146 (57.4") 115 (45.4") Stringline

MAX CRUSH

NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewalls, etc.). If pulling trailer, sketch type of trailer and damage received on the back of the trailer.
Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

CDC WORKSHEET

CODES FOR OBJECT CONTACTED

(01-30) — Vehicle Number

Noncollision
- (31) Overturn — rollover
- (32) Fire or explosion
- (33) Jackknife
- (34) Other intraunit damage (specify): _____
- (35) Noncollision injury
- (38) Other noncollision (specify): _____
- (39) Noncollision — details unknown

Collision With Fixed Object
- (41) Tree (≤ 10 cm in diameter)
- (42) Tree (> 10 cm in diameter)
- (43) Shrubbery or bush
- (44) Embankment
- (45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post
- (50) Pole or post (≤ 10 cm in diameter)
- (51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
- (52) Pole or post (> 30 cm in diameter)
- (53) Pole or post (diameter unknown)
- (54) Concrete traffic barrier
- (55) Impact attenuator
- (56) Other traffic barrier (includes guardrail) (specify): _____
- (57) Fence
- (58) Wall
- (59) Building
- (60) Ditch or culvert
- (61) Ground
- (62) Fire hydrant
- (63) Curb
- (64) Bridge
- (68) Other fixed object (specify): _____
- (69) Unknown fixed object

Collision with Nonfixed Object
- (71) Motor vehicle not in-transport
- (72) Pedestrian
- (73) Cyclist or cycle
- (74) Other nonmotorist or conveyance _____
- (75) Vehicle occupant
- (76) Animal
- (77) Train
- (78) Trailer, disconnected in transport
- (88) Other nonfixed object (specify): _____
- (89) Unknown nonfixed object
- (98) Other event (specify): _____
- (99) Unknown event or object

DEFORMATION CLASSIFICATION BY EVENT NUMBER

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force (degrees)	Incremental Value of Shift	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
01	02	350	00	F	D	E	W	01

COLLISION DEFORMATION CLASSIFICATION

HIGHEST DELTA "V"

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Longitudinal or Lateral Location	(5) Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. Ø 1	5. Ø 2	6. 1 2	7. F	8. D	9. E	10. W	11. Ø 1

Second Highest Delta "V"

12. ___ ___	13. ___ ___	14. ___ ___	15. ___	16. ___	17. ___	18. ___	19. ___ ___

CRUSH PROFILE IN CENTIMETERS

The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. (ALL MEASUREMENTS ARE IN CENTIMETERS.)

HIGHEST DELTA "V"

20. L	21. C_1	C_2	C_3	C_4	C_5	C_6	22. ±D
1 7 5 (69")	Ø 3 2 (13")	Ø 2 4 (14")	Ø 2 Ø (Ø8")	Ø Ø 7 (Ø3")	Ø Ø 5 (Ø2")	Ø Ø 9 (Ø4")	+ − Ø Ø Ø

Second Highest Delta "V"

23. L	24. C_1	C_2	C_3	C_4	C_5	C_6	25. ±D
___	___	___	___	___	___	___	+ − ___

26. Are CDCs Documented but Not Coded on The Automated File? Ø
(0) No
(1) Yes

27. Researcher's Assessment of Vehicle Disposition 1
(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

28. Original Wheelbase 2 9 8
Code to the nearest centimeter
(999) Unknown

1 1 7 . 4 inches X 2.54 = 2 9 8 centimeters

29. Is This A Multi-Stage Manufactured Vehicle And/Or A Certified Altered Vehicle? Ø
(0) No post manufacturer modifications
(1) Yes - post manufacturer modifications (specify): _____
_____
_____
(Include photograph of CERTIFICATION PLACARD in case report)
(9) Unknown if vehicle is modified

30. Fire Occurrence Ø
(0) No fire

Yes, fire occurred
(1) Minor
(2) Major
(9) Unknown

31. Origin of Fire Ø
(0) No fire
(1) Vehicle exterior (front, side, back, top)
(2) Exhaust system
(3) Fuel tank (and other fuel retention system parts)
(4) Engine compartment
(5) Cargo/trunk compartment
(6) Instrument panel
(7) Passenger compartment area
(8) Other location (specify):
_____
(9) Unknown

32. Type of Fuel Tank 1
(0) No fuel tank (electrical vehicle)
(1) Metallic
(2) Non-metallic
(9) Unknown

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED AND WAS NOT AN AOPS *** (I.E., GV09=0 OR 9 AND GV36=0), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.

U.S. Department of Transportation
National Highway Traffic Safety Administration

INTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ____
2. Case Number - Stratum DSI-93-AB-0007
3. Vehicle Number 01

INTEGRITY

4. Passenger Compartment Integrity 00
(00) No integrity loss

Yes, Integrity Was Lost Through
(01) Windshield
(02) Door (side)
(03) Door/hatch (back door)
(04) Roof
(05) Roof glass
(06) Side window
(07) Rear window (backlight)
(08) Roof and roof glass
(09) Windshield and door (side)
(10) Windshield and roof
(11) Side and rear window (side window and backlight)
(12) Windshield and side window
(13) Door and side window
(98) Other combination of above (specify): _____
(99) Unknown

Door, Tailgate or Hatch Opening

5. LF 3 6. RF 1 7. LR 1 8. RR 1 9. TG/H 0

(0) No door/gate/hatch
(1) Door/gate/hatch remained closed and operational
(2) Door/gate/hatch came open during collision
(3) Door/gate/hatch jammed shut
(8) Other (specify): _____
(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 ≠ 2, Then code 0

10. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate or Hatch Came Open During Collision
(1) Door operational (no damage)
(2) Latch/striker failure due to damage
(3) Hinge failure due to damage
(4) Door structure failure due to damage
(5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage
(6) Latch/striker and hinge failure due to damage
(8) Other failure (specify): _____
(9) Unknown

GLAZING

Glazing Damage from Impact Forces

15. WS 2 16. LF 0 17. RF 0 18. LR 0 19. RR 0
20. BL 0 21. Roof 8 22. Other 0

(0) No glazing damage from impact forces
(2) Glazing in place and cracked from impact forces
(3) Glazing in place and holed from impact forces
(4) Glazing out-of-place (cracked or not) and not holed from impact forces
(5) Glazing out-of-place and holed from impact forces
(6) Glazing disintegrated from impact forces
(7) Glazing removed prior to accident
(8) No glazing
(9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 0 24. LF 0 25. RF 0 26. LR 0 27. RR 0
28. BL 0 29. Roof 0 30. Other 0

(0) No occupant contact to glazing or no glazing
(1) Glazing contacted by occupant but no glazing damage
(2) Glazing in place and cracked by occupant contact
(3) Glazing in place and holed by occupant contact
(4) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact
(5) Glazing out-of-place by occupant contact and holed by occupant contact
(6) Glazing disintegrated by occupant contact
(9) Unknown if contacted by occupant

If No Glazing Damage *And* No Occupant Contact or No Glazing, Then Code IV31 Through IV46 As 0

Type of Window/Windshield Glazing

31. WS 1 32. LF 0 33. RF 0 34. LR 0 35. RR 0
36. BL 0 37. Roof 0 38. Other 0

(0) No glazing contact and no damage, or no glazing
(1) AS-1 — Laminated
(2) AS-2 — Tempered
(3) AS-3 — Tempered-tinted
(4) AS-14 — Glass/Plastic
(8) Other (specify): _____
(9) Unknown

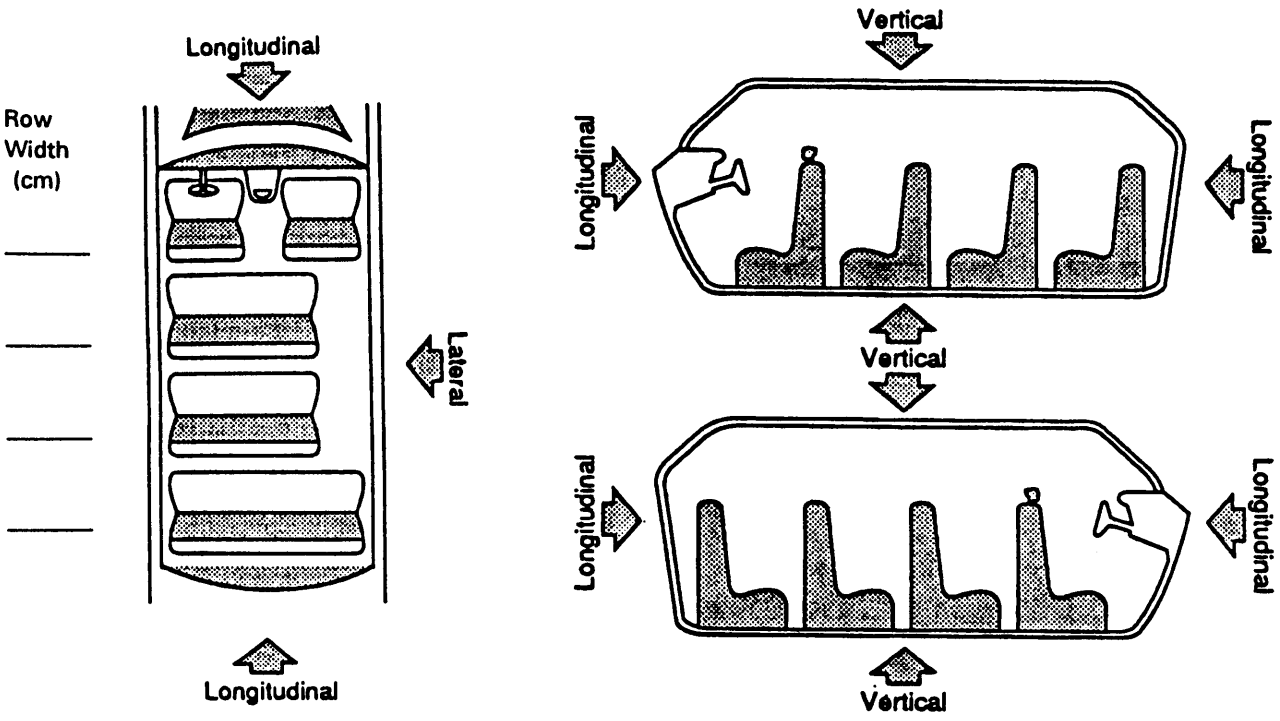
Window Precrash Glazing Status

39. WS 1 40. LF 0 41. RF 0 42. LR 0 43. RR 0
44. BL 0 45. Roof 0 46. Other 0

(0) No glazing contact and no damage, or no glazing
(1) Fixed
(2) Closed
(3) Partially opened
(4) Fully opened
(9) Unknown

INTRUSION WORKSHEET

Note: Sketch intruded areas



LOCATION OF INTRUSION	INTRUDED COMPONENT	(All Measurements Are In Centimeters) COMPARISON VALUE — INTRUDED VALUE = INTRUSION	DOMINANT CRUSH DIRECTION
		— =	
		— =	
		— =	
		— =	
		— =	
		— =	
		— =	
		— =	
		— =	
		— =	
		— =	
		— =	
		— =	
		— =	
		— =	

Document no more than the 15 most severe intrusions

OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV47-IV86 blank.

	Location of Intrusion	Intruding Component	Magnitude of Intrusion	Dominant Crush Direction
1st	47.___	48.___	49.___	50.___
2nd	51.___	52.___	53.___	54.___
3rd	55.___	56.___	57.___	58.___
4th	59.___	60.___	61.___	62.___
5th	63.___	64.___	65.___	66.___
6th	67.___	68.___	69.___	70.___
7th	71.___	72.___	73.___	74.___
8th	75.___	76.___	77.___	78.___
9th	79.___	80.___	81.___	82.___
10th	83.___	84.___	85.___	86.___

LOCATION OF INTRUSION

Front Seat
- (11) Left
- (12) Middle
- (13) Right

Second Seat
- (21) Left
- (22) Middle
- (23) Right

Third Seat
- (31) Left
- (32) Middle
- (33) Right

Fourth Seat
- (41) Left
- (42) Middle
- (43) Right

- (97) Catastrophic
- (98) Other enclosed area (specify) _____
- (99) Unknown

INTRUDING COMPONENT

Interior Components
- (01) Steering assembly
- (02) Instrument panel left
- (03) Instrument panel center
- (04) Instrument panel right
- (05) Toe pan
- (06) A (A1/A2)-pillar
- (07) B-pillar
- (08) C-pillar
- (09) D-pillar
- (10) Door panel (side)
- (12) Roof (or convertible top)
- (13) Roof side rail
- (14) Windshield
- (15) Windshield header
- (16) Window frame
- (17) Floor pan (includes sill)
- (18) Backlight header
- (19) Front seat back
- (20) Second seat back
- (21) Third seat back
- (22) Fourth seat back
- (23) Fifth seat back
- (24) Seat cushion
- (25) Back door/panel (e.g., tailgate)
- (26) Other interior component (specify): _____
- (27) Side panel - forward of the A (A2)-pillar
- (28) Side panel - rear of the A (A2)-pillar

Exterior Components
- (30) Hood
- (31) Outside surface of this vehicle (specify): _____
- (32) Other exterior object in the environment (specify): _____
- (33) Unknown exterior object
- (97) Catastrophic
- (98) Intrusion of unlisted component(s) (specify): _____
- (99) Unknown

MAGNITUDE OF INTRUSION

- (1) ≥ 3 centimeters but < 8 centimeters
- (2) ≥ 8 centimeters but < 15 centimeters
- (3) ≥ 15 centimeters but < 30 centimeters
- (4) ≥ 30 centimeters but < 46 centimeters
- (5) ≥ 46 centimeters but < 61 centimeters
- (6) ≥ 61 centimeters
- (7) Catastrophic
- (9) Unknown

DOMINANT CRUSH DIRECTION

- (1) Vertical
- (2) Longitudinal
- (3) Lateral
- (7) Catastrophic
- (9) Unknown

STEERING RIM/SPOKE DEFORMATION

(All Measurements Are in Centimeters)

COMPARISON VALUE	—	DAMAGE VALUE	=	DEFORMATION
	—		=	
	—		=	
	—		=	
	—		=	

STEERING COLUMN

87. Steering Column Type — 2
(1) Fixed column
(2) Tilt column
(3) Telescoping column
(4) Tilt and telescoping column
(8) Other column type (specify): _____
(9) Unknown

88. Blank — X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

89. Blank — X X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

90. Blank — X X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

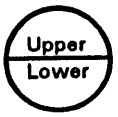
91. Blank — X X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

92. Steering Rim/Spoke Deformation — Ø Ø
_____Code actual measured deformation to the nearest centimeter
(00) No steering rim deformation
(01-14) Actual measured value in centimeters
(15) 15 centimeters or more
(98) Observed deformation cannot be measured
(99) Unknown

93. Location of Steering Rim/Spoke Deformation — Ø Ø
(00) No steering rim deformation

Quarter Sections
(01) Section A
(02) Section B
(03) Section C
(04) Section D

Half Sections
(05) Upper half of rim/spoke
(06) Lower half of rim/spoke
(07) Left half of rim/spoke
(08) Right half of rim/spoke



(09) Complete steering wheel collapse
(10) Undetermined location
(99) Unknown

INSTRUMENT PANEL

94. Odometer Reading — 1 2 4,000
_____kilometers—Code to the nearest 1,000 kilometers
(000) No odometer
(001) Less than 1,500 kilometers
(500) 499,500 kilometers or more
(999) Unknown

Ø76,959 miles X 1.6093 = 123,827 kilometers

Source: INSPECTION

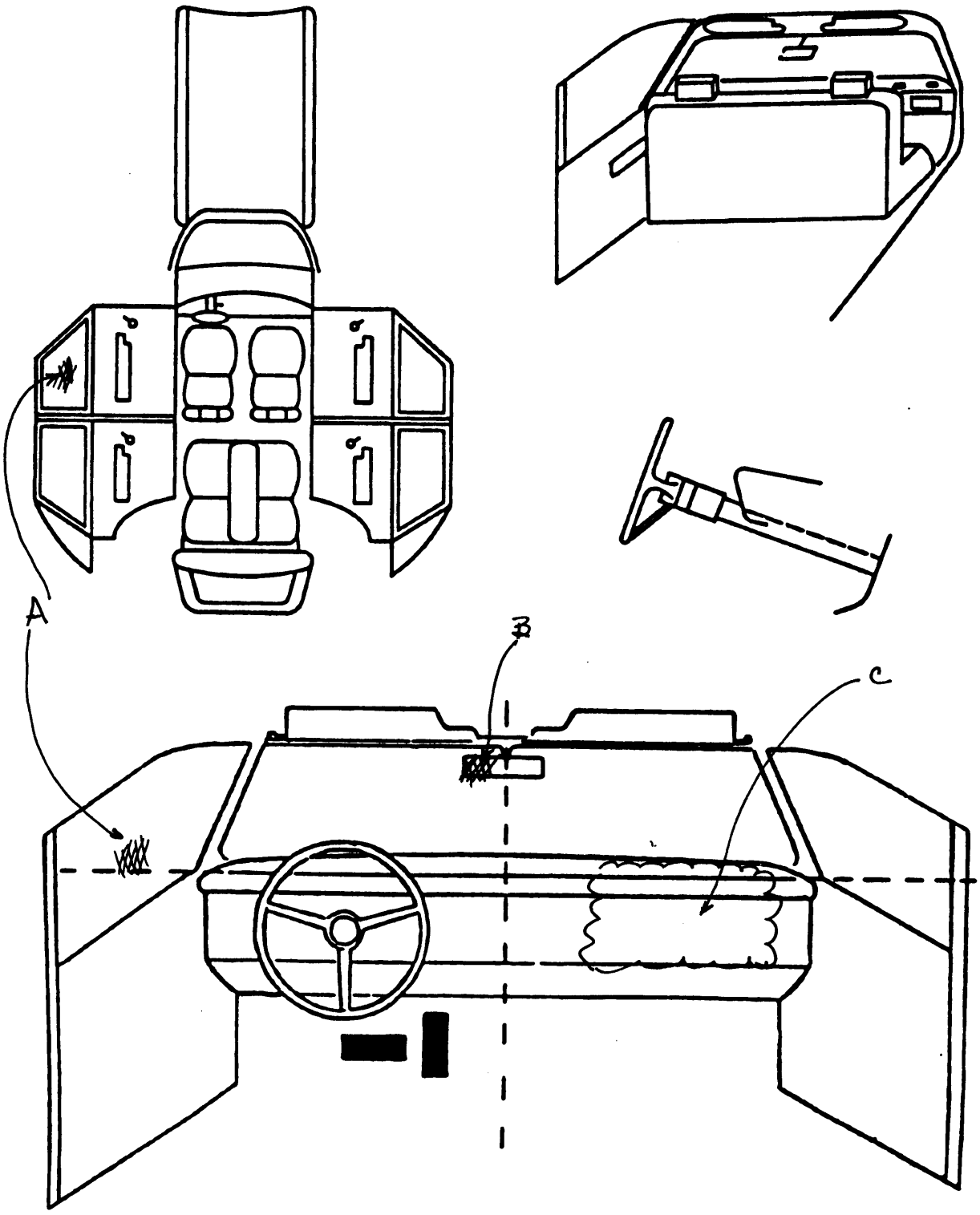
95. Instrument Panel Damage from Occupant Contact? — Ø
(0) No
(1) Yes
(9) Unknown

96. Knee Bolsters Deformed from Occupant Contact? — 8
(0) No
(1) Yes
(8) Not present
(9) Unknown

97. Did Glove Compartment Door Open During Collision(s)? — Ø
(0) No
(1) Yes
(8) Not present
(9) Unknown

VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment



Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure.
Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.
Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	25	01	HEAD	BODY OIL	1
B	02	01	R. HAND	BODY OIL / DISPLACED	1
C	45	02	FACE	PASS. SIDE AIRBAG DEPLOYED	1
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

CODES FOR INTERIOR COMPONENTS

FRONT
- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
- (16) Driver side air bag compartment cover
- (17) Passenger side air bag compartment cover
- (18) Windshield reinforced by exterior object (specify):_____
- (19) Other front object (specify):

LEFT SIDE
- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A (A1/A2)-pillar
- (23) Left B-pillar
- (24) Other left pillar (specify):
- (25) Left side window glass or frame
- (26) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
- (27) Other left side object (specify):
- (28) Left side window sill

RIGHT SIDE
- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A (A1/A2)-pillar
- (33) Right B-pillar
- (34) Other right pillar (specify):
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B pillar, or roof side rail.
- (37) Other right side object (specify):
- (38) Right side window sill

INTERIOR
- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify):_____
- (44) Head restraint system
- (45) Air bag (use codes "16" and "17" for injuries sustained from air bag compartment covers)
- (46) Other occupants (specify):
- (47) Interior loose objects
- (48) Child safety seat (specify):
- (49) Other interior object (specify):

ROOF
- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR
- (56) Floor (including toe pan)
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR
- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify):

CONFIDENCE LEVEL OF CONTACT POINT
- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attribute for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

AIR BAGS

		Left	Right
FIRST	Availability/Function	1	1
	Deployment	4	1
	Failure	1	1

Air Bag System Availability/Function
- (0) Not equipped/not available
- (1) Air bag

No..-functional
- (2) Air bag disconnected (specify): _____
- (3) Air bag not reinstalled
- (9) Unknown

Air Bag System Deployment
- (0) Not equipped/not available
- (1) Air bag deployed during accident (as a result of impact)
- (2) Air bag deployed inadvertently just prior to accident
- (3) Air bag deployed, accident sequence undetermined
- (4) Nondeployed
- (5) Unknown if deployed
- (6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
- (9) Unknown

Did Air Bag System Fail?
- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____
- (9) Unknown

AUTOMATIC BELTS

		Left	Right
FIRST	Availability/Function	ϕ	ϕ
	Use	ϕ	ϕ
	Type	ϕ	ϕ
	Proper Use	ϕ	ϕ
	Failure Modes	ϕ	ϕ

Automatic (Passive) Belt System Availability/Function
- (0) Not equipped/not available
- (1) 2 point automatic belts
- (2) 3 point automatic belts
- (3) Automatic belts - type unknown

Non-functional
- (4) Automatic belts destroyed or rendered inoperative
- (9) Unknown

Automatic (Passive) Belt System Use
- (0) Not equipped/not available/destroyed or rendered inoperative
- (1) Automatic belt in use
- (2) Automatic belt not in use (manually disconnected, motorized track inoperative)
- (3) Automatic belt use unknown
- (9) Unknown

Automatic (Passive) Belt System Type
- (0) Not equipped/not available
- (1) Non-motorized system
- (2) Motorized system
- (9) Unknown

Proper Use of Automatic (Passive) Belt System
- (0) Not equipped/not available/not used
- (1) Automatic belt used properly
- (2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly
- (3) Automatic shoulder belt worn under arm
- (4) Automatic shoulder belt worn behind back
- (5) Automatic belt worn around more than one person
- (6) Lap portion of automatic belt worn on abdomen
- (7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify): _____
- (8) Other improper use of automatic belt system (specify): _____
- (9) Unknown

Automatic (Passive) Belt Failure Modes During Accident
- (0) Not equipped/not available/not in use
- (1) No automatic belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____
- (6) Broken retractor
- (7) Combination of above (specify):
- (8) Other automatic belt failure (specify): _____
- (9) Unknown

MANUAL RESTRAINTS

NOTES: Encode the applicable data **for each seat position** in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Ocupant Assessment Form.

If a Child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
FIRST	Availability	4	3	4
	Use	ϕ4	ϕϕ	ϕ4
	Failure Modes	1	ϕ	1
SECOND	Availability	4	3	4
	Use	ϕϕ	ϕϕ	ϕϕ
	Failure Modes	ϕ	ϕ	ϕ
THIRD	Availability			
	Use			
	Failure Modes			
OTHER	Availability			
	Use			
	Failure Modes			

Manual (Active) Belt System Availability

(0) None available
(1) Belt removed/destroyed
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt available - type unknown

Integral Belt Partially Destroyed

(6) Shoulder belt (lap belt destroyed/removed)
(7) Lap belt (shoulder belt destroyed/removed)
(8) Other belt (specify): _____
(9) Unknown

Manual (Active) Belt System Use

(00) None used, not available, or belt removed/destroyed
(01) Inoperable (specify): _____
(02) Shoulder belt
(03) Lap belt
(04) Lap and shoulder belt
(05) Belt used - type unknown
(08) Other belt used (specify): _____
(12) Shoulder belt used with child safety seat
(13) Lap belt used with child safety seat
(14) Lap and shoulder belt used with child safety seat
(15) Belt used with child safety seat - type unknown
(18) Other belt used with child safety seat (specify): _____
(99) Unknown if belt used

Manual (Active) Belt Failure Modes During Accident

(0) No manual belt used or not available
(1) No manual belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): _____
(6) Broken retractor
(7) Combination of above (specify): _____
(8) Other manual belt failure (specify): _____
(9) Unknown

CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Uasge						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

1. Type of Child Safety Seat

   (0) No child safety seat
   (1) Infant seat
   (2) Toddler seat
   (3) Convertible seat
   (4) Booster seat
   (7) Other type child safety seat (specify):

   _____

   (8) Unknown child safety seat type
   (9) Unknown if child safety seat used

2. Child Safety Seat Orientation

   (00) No child safety seat

   Designed for Rear Facing for This Age/Weight
   (01) Rear facing
   (02) Forward facing
   (08) Other orientation (specify):

   _____

   (09) Unknown orientation

   Designed for Forward Facing for This Age/Weight
   (11) Rear facing
   (12) Forward facing
   (18) Other orientation (specify):

   _____

   (19) Unknown orientation

   Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
   (21) Rear facing
   (22) Forward facing
   (28) Other orientation (specify):

   _____

   (29) Unknown orientation

   (99) Unknown if child safety seat used

3. Child Safety Seat Harness Usage

4. Child Safety Seat Shield Usage

5. Child Safety Seat Tether Usage
   Note: Options Below Are Used for Variables 3-5.

   (00) No child safety seat

   Not Designed with Harness/Shield/Tether
   (01) After market harness/shield/tether added, not used
   (02) After market harness/shield/tether used
   (03) Child safety seat used, but no after market harness/shield/tether added
   (09) Unknown if harness/shield/tether added or used

   Designed With Harness/Shield/Tether
   (11) Harness/shield/tether not used
   (12) Harness/shield/tether used
   (19) Unknown if harness/shield/tether used

   Unknown If Designed With Harness/Shield/Tether
   (21) Harness/shield/tether not used
   (22) Harness/shield/tether used
   (29) Unknown if harness/shield/tether used

   (99) Unknown if child safety seat used

6. Child Safety Seat Make/Model
   (Specify make/model and occupant number)

   _____

   _____

   _____

   _____

HEAD RESTRAINTS/SEAT EVALUATION

NOTES: Encode the applicable data for **each seat position** in the vehicle. The attribute for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
FIRST	Head Restraint Type/Damage	3	ϕ	3
	Seat Type	ϕ6	ϕ6	ϕ6
	Seat Performance	1	1	1
	Seat Orientation	1	1	1
SECOND	Head Restraint Type/Damage	ϕ	ϕ	ϕ
	Seat Type	ϕ3	ϕ3	ϕ3
	Seat Performance	1	1	1
	Seat Orientation	1	1	1
THIRD	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			
OTHER	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			

Head Restraint Type/Damage by Occupant at This Occupant Position

(0) No head restraints
(1) Integral — no damage
(2) Integral — damaged during accident
(3) Adjustable — no damage
(4) Adjustable — damaged during accident
(5) Add-on — no damage
(6) Add-on — damaged during accident
(8) Other Specify): _____
(9) Unknown

Seat Type (this Occupant Position)

(00) Occupant not seated or no seat
(01) Bucket
(02) Bucket with folding back
(03) Bench
(04) Bench with separate back cushions
(05) Bench with folding back(s)
(06) Split bench with separate back cushions
(07) Split bench with folding back(s)
(08) Pedestal (i.e., column supported)
(09) Other seat type (specify): _____
(10) Box mounted seat (i.e., van type)
(99) Unknown

Seat Performance (this Occupant Position)

(0) Occupant not seated or no seat
(1) No seat performance failure(s)
(2) Seat adjusters failed
(3) Seat back folding locks or "seat back" failed specify: _____
(4) Seat tracks/anchors failed
(5) Deformed by impact of occupant
(6) Deformed by passenger compartment intrusion (specify): _____
(7) Combination of above (specify): _____
(8) Other (specify): _____
(9) Unknown

Seat Orientation (this Occupant Position)

(0) Occupant not seated or no seat
(1) Forward facing seat
(2) Rear facing seat
(3) Side facing seat (inward)
(4) Side facing seat (outward)
(8) Other (specify): _____
(9) Unknown

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E., UNUSUAL OCCUPANT CONTACT PATTERN)

EJECTION/ENTRAPMENT DATA

Complete the following if the researcher has any indication that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occpant Assessment Form.

EJECTION No [X] Yes [ ]

Describe indications of ejection and body parts involved in partial ejection(s):

Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

Ejection
(1) Complete ejection
(2) Partial ejection
(3) Ejection, Unknown degree
(9) Unknown

Ejection Area
(1) Windshield
(2) Left front
(3) Right front
(4) Left rear
(5) Right rear
(6) Rear
(7) Roof
(8) Other area (e.g., back of pickup, etc.) (specify): _____
(9) Unknown

Ejection Medium
(1) Door/hatch/tailgate
(2) Nonfixed roof structure
(3) Fixed glazing
(4) Nonfixed glazing (specify): _____
(5) Integral structure
(8) Other medium (specify): _____
(9) Unknown

Medium Status (Immediately Prior to Impact)
(1) Open
(2) Closed
(3) Integral structure
(9) Unknown

ENTRAPMENT No [X] Yes [ ]

Describe entrapment mechanism: _____

Component(s): _____

(Note in vehicle interior diagram)

U.S. Department of Transportation
National Highway Traffic Safety Administration

OCCUPANT ASSESSMENT FORM

Form Approved
O.M.B. No. 2127-0021

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ____
2. Case Number - Stratum DST-93-AB-0007
3. Vehicle Number 01
4. Occupant Number 01

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 35
Code actual age at time of accident.
(00) Less than one year old (specify by month): _____
(97) 97 years and older
(99) Unknown

6. Occupant's Sex 2
(1) Male
(2) Female
(9) Unknown

7. Occupant's Height 163
Code actual height to the nearest centimeter.
(999) Unknown

64 inches X 2.54 = 163 centimeters

8. Occupant's Weight 061
Code actual weight to the nearest kilogram.
(999)Unknown

135 pounds X .4536 = 061 kilograms

9. Occupant's Role 1
(1) Driver
(2) Passenger
(9) Unknown

OCCUPANT'S SEATING

10. Occupant's Seat Position 11
Front Seat
(11) Left side
(12) Middle
(13) Right side
(14) Other (specify): _____
(15) On or in the lap of another occupant

Second Seat
(21) Left side
(22) Middle
(23) Right side
(24) Other (specify): _____
(25) On or in the lap of another occupant

Third Seat
(31) Left side
(32) Middle
(33) Right side
(34) Other (specify): _____
(35) On or in the lap of another occupant

Fourth Seat
(41) Left side
(42) Middle
(43) Right side
(44) Other (specify): _____
(45) On or in the lap of another occupant

(97) In or on unenclosed area
(98) Other seat (specify): _____
(99) Unknown

11. Occupant's Posture 0
(0) Normal posture

Abnormal posture
(1) Kneeling or standing on seat
(2) Lying on or across seat
(3) Kneeling, standing or sitting in front of seat
(4) Sitting sideways or turned to talk with another occupant or to look out a rear window
(5) Sitting on a console
(6) Lying back in a reclined seat position
(7) Bracing with feet or hands on a surface in front of seat
(8) Other abnormal posture (specify): _____
(9) Unknown

This report is authorized by P.L. 89-563, Title 1, Section 106, 108, and 112. While you are not required to respond, your cooperation is needed to make the results of this data collection effort comprehensive, accurate, and timely.

EJECTION/ENTRAPMENT

12. Ejection ϕ
    (0) No ejection
    (1) Complete ejection
    (2) Partial ejection
    (3) Ejection, unknown degree
    (9) Unknown

13. Ejection Area ϕ
    (0) No ejection
    (1) Windshield
    (2) Left front
    (3) Right front
    (4) Left rear
    (5) Right rear
    (6) Rear
    (7) Roof
    (8) Other area (e.g., back of pickup, etc.) (specify):_____
    (9) Unknown

14. Ejection Medium ϕ
    (0) No ejection
    (1) Door/hatch/tailgate
    (2) Nonfixed roof structure
    (3) Fixed glazing
    (4) Nonfixed glazing (specify):
    _____
    (5) Integral structure
    (8) Other medium (specify):
    _____
    (9) Unknown

15. Medium Status (Immediately Prior To Impact) ϕ
    (0) No ejection
    (1) Open
    (2) Closed
    (3) Integral structure
    (9) Unknown

16. Entrapment ϕ
    (NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)
    (0) Not entrapped
    (1) Entrapped
    (9) Unknown

RESTRAINT SYSTEM EVALUATION

17. Manual (Active) Belt System Availability — 4
(0) None available
(1) Belt removed/destroyed
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt available—type unknown

Integral Belt Partially Destroyed
(6) Shoulder belt (lap belt destroyed/removed)
(7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify):

(9) Unknown

18. Manual (Active) Belt System Use — Ø 4
(00) None used, not available, or belt removed/destroyed
(01) Inoperative (specify):

(02) Shoulder belt
(03) Lap belt
(04) Lap and shoulder belt
(05) Belt used—type unknown
(08) Other belt used (specify):

(12) Shoulder belt used with child safety seat
(13) Lap belt used with child safety seat
(14) Lap and shoulder belt used with child safety seat
(15) Belt used with child safety seat—type unknown
(18) Other belt used with child safety seat (specify):
(99) Unknown if belt used

19. Proper Use of Manual (Active) Belts — 1
(0) None used or not available
(1) Belt used properly
(2) Belt used properly with child safety seat

Belt Used Improperly
(3) Shoulder belt worn under arm
(4) Shoulder belt worn behind back or seat
(5) Belt worn around more than one person
(6) Lap belt worn on abdomen
(7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of manual belt system (specify):

(9) Unknown

20. Manual (Active) Belt Failure Modes During Accident — 1
(0) No manual belt used
(1) No manual belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):

(8) Other manual belt failure (specify):

(9) Unknown

21. Air Bag System Availability/Function — 1
(0) Not equipped/not available
(1) Air bag

Non-functional
(2) Air bag disconnected (specify):

(3) Air bag not reinstalled
(9) Unknown

22. Air Bag System Deployment — 4
(0) Not equipped/not available
(1) Air bag deployed during accident (as a result of impact)
(2) Air bag deployed inadvertently just prior to accident
(3) Air bag deployed, accident sequence undetermined
(4) Nondeployed
(5) Unknown if deployed
(6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(9) Unknown

23. Are There Indications of Air Bag System Failure? — 1
(0) Not equipped/not available
(1) No
(2) Yes (specify):

(9) Unknown

Note: See Variables 44 through 48 (Page 5) for Information on Automatic Belts

24. Police Reported Restraint Use — 4
(0) None used
(1) Police did not indicate restraint use
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt used, type not specified
(6) Child safety seat
(7) Other or automatic restraint (specify):

(8) Restrained, type unknown
(9) Police indicated "unknown"

HEAD RESTRAINT AND SEAT EVALUATION

25. Head Restraint Type/Damage by Occupant at This Occupant Position — 3
    (0) No head restraints
    (1) Integral—no damage
    (2) Integral—damaged during accident
    (3) Adjustable—no damage
    (4) Adjustable—damaged during accident
    (5) Add-on—no damage
    (6) Add-on—damaged during accident
    (8) Other (specify): _____
    (9) Unknown

26. Seat Type (this Occupant Position) — Ø 6
    (00) Occupant not seated or no seat
    (01) Bucket
    (02) Bucket with folding back
    (03) Bench
    (04) Bench with separate back cushions
    (05) Bench with folding back(s)
    (06) Split bench with separate back cushions
    (07) Split bench with folding back(s)
    (08) Pedestal (i.e., column supported)
    (09) Other seat type (specify): _____
    (10) Box mounted seat (i.e., van type)
    (99) Unknown

27. Seat Performance (this Occupant Position) — 1
    (0) Occupant not seated or no seat
    (1) No seat performance failure(s)
    (2) Seat adjusters failed
    (3) Seat back folding locks or "seat back" failed
    (4) Seat track/anchors failed
    (5) Deformed by impact of occupant
    (6) Deformed by passenger compartment intrusion (specify): _____
    (7) Combination of above (specify): _____
    (8) Other (specify): _____
    (9) Unknown

CHILD SAFETY SEAT

28. Child Safety Seat Make/Model ϕ ϕ ϕ
(000) No child safety seat
Applicable codes are found in your NASS CDS Data Collection, Coding and Editing
(950) Built-in child safety seat
(997) Other make/model (specify):
_____
(998) Unknown make/model
(999) Unknown if child safety seat used

29. Type of Child Safety Seat ϕ
(0) No child safety seat
(1) Infant seat
(2) Toddler seat
(3) Convertible seat
(4) Booster seat
(7) Other type child safety seat (specify):
_____
(8) Unknown child safety seat type
(9) Unknown if child safety seat used

30. Child Safety Seat Orientation ϕ ϕ
(00) No child safety seat

Designed for Rear Facing for This Age/Weight
(01) Rear facing
(02) Forward facing
(08) Other orientation (specify):
_____
(09) Unknown orientation

Designed For Forward Facing for This Age/Weight
(11) Rear facing
(12) Forward facing
(18) Other orientation (specify):
_____
(19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
(21) Rear facing
(22) Forward facing
(28) Other orientation (specify):
_____
(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage ϕ ϕ

32. Child Safety Seat Shield Usage ϕ ϕ

33. Child Safety Seat Tether Usage ϕ ϕ

Note: Options below applicable to Variables OA31-OA33.
(00) No child safety seat

Not Designed With Harness/Shield/Tether
(01) After market harness/shield/tether added, not used
(02) After market harness/shield/tether used
(03) Child safety seat used, but no after market harness/shield/tether added
(09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether
(11) Harness/shield/tether not used
(12) Harness/shield/tether used
(19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether
(21) Harness/shield/tether not used
(22) Harness/shield/tether used
(29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES

34. Injury Severity (Police Rating) 2

(0) O - No injury
(1) C - Possible injury
(2) B - Nonincapacitating injury
(3) A - Incapacitating injury
(4) K - Killed
(5) U - Injury, severity unknown
(6) Died prior to accident
(9) Unknown

35. Treatment - Mortality 4
(0) No treatment
(1) Fatal
(2) Fatal - ruled disease (specify):
_____

Nonfatal
(3) Hospitalization
(4) Transported and released
(5) Treatment at scene - nontransported
(6) Treatment later
(8) Treatment - other (specify):
_____
(9) Unknown

36. Type Of Medical Facility (for Initial Treatment) 2
(0) Not treated at a medical facility
(1) Trauma center
(2) Hospital
(3) Medical clinic
(4) Physician's office
(5) Treatment later at medical facility
(8) Other (specify):
_____
(9) Unknown

37. Hospital Stay 0 0
(00) Not Hospitalized
_____Code the number of days (up through 60) that the occupant stayed in hospital.
(61) 61 days or more
(99) Unknown

99. Case Occupant 1
(0) Not the Case Occupant
(1) This is the Case Occupant
(2) This is the Case Occupant in another case.

38. Working Days Lost 6 1
_____Code the number of days (up through 60) that the occupant lost from work due to the accident
(00) No working days lost
(61) 61 days or more
(62) Fatally injured
(97) Not working prior to accident
(99) Unknown

STOP - GO TO VARIABLE 44 ON PAGE 7

VARIABLES 39 THROUGH 43 ARE COMPLETED BY THE ZONE CENTER

39. Time to Death 0 0
_____Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 +n up through 30 days = 60)
(00) Not fatal
(96) Fatal - ruled disease
(99) Unknown

40. 1st Medically Reported Cause of Death 0 0

41. 2nd Medically Reported Cause of Death 0 0

42. 3rd Medically Reported Cause of Death 0 0
_____Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
(00) Not fatal or no additional causes
(96) Mode of death given but specific injuries are not linked to cause of death. (specify):
_____
(97) Other result (includes fatal ruled disease) (specify):
_____
(99) Unknown

43. Number of Recorded Injuries for This Occupant 0 6
_____Code the actual number of injuries recorded for this occupant.
(00) No recorded injuries
(97) Injured, details unknown
(99) Unknown if injured

AUTOMATIC BELT SYSTEM

44. Automatic (Passive) Belt System Availability/ Function — Ø
(0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional
(4) Automatic belts destroyed or rendered inoperative
(9) Unknown

45. Automatic (Passive) Belt System Use — Ø
(0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):

(3) Automatic belt use unknown
(9) Unknown

46. Automatic (Passive) Belt System Type — Ø
(0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

47. Proper Use of Automatic (Passive Belt System — Ø
(0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly
(3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of automatic belt system (specify):
(9) Unknown

48. Automatic (Passive) Belt Failure Modes During Accident — Ø
(0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):
(8) Other automatic belt failure (specify):

(9) Unknown

49. Seat Orientation (this Occupant Position) — 1
(0) Occupant not seated or no seat
(1) Forward facing seat
(2) Rear facing seat
(3) Side facing seat (inward)
(4) Side facing seat (outward)
(8) Other (specify):

(9) Unknown

STOP - VARIABLES 50 THROUGH 52 ARE COMPLETED BY THE ZONE CENTER

TRAUMA DATA

50. Glasgow Coma Scale (GCS) Score (at Medical Facility) — Ø 2
(00) Not injured
(01) Injured - not treated at medical facility
(02) No GCS Score at medical facility
(03-15) Code the actual value of the initial GCS Score recorded at medical facility.
(97) Injured, details unknown
(99) Unknown if injured

51. Was the Occupant Given Blood? — 1
(1) No - blood not given
(2) Yes - blood given (specify units):
(9) Unknown if blood given

52. Arterial Blood Gases (ABG) – HCO_3 — Ø 1
(00) Not injured
(01) Injured, ABGs not measured or reported
(02-50) Code the actual value of the HCO_3
(96) ABGs reported , HCO_3 unknown
(97) Injured, details unknown
(99) Unknown if injured

ARE ALL APPLICABLE MEDICAL RECORDS INCLUDED WITH INITIAL SUBMISSION? NO [X] YES [ ]

UPDATE CANDIDATE? NO [X] YES [ ]

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U.S. Department of Transportation
National Highway Traffic Safety Administration

OCCUPANT INJURY FORM

Form Approved
O.M.B. No. 2127-0021
NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ___
2. Case Number - Stratum DSI-93-AB-0067
3. Vehicle Number 01
4. Occupant Number 01

INJURY DATA

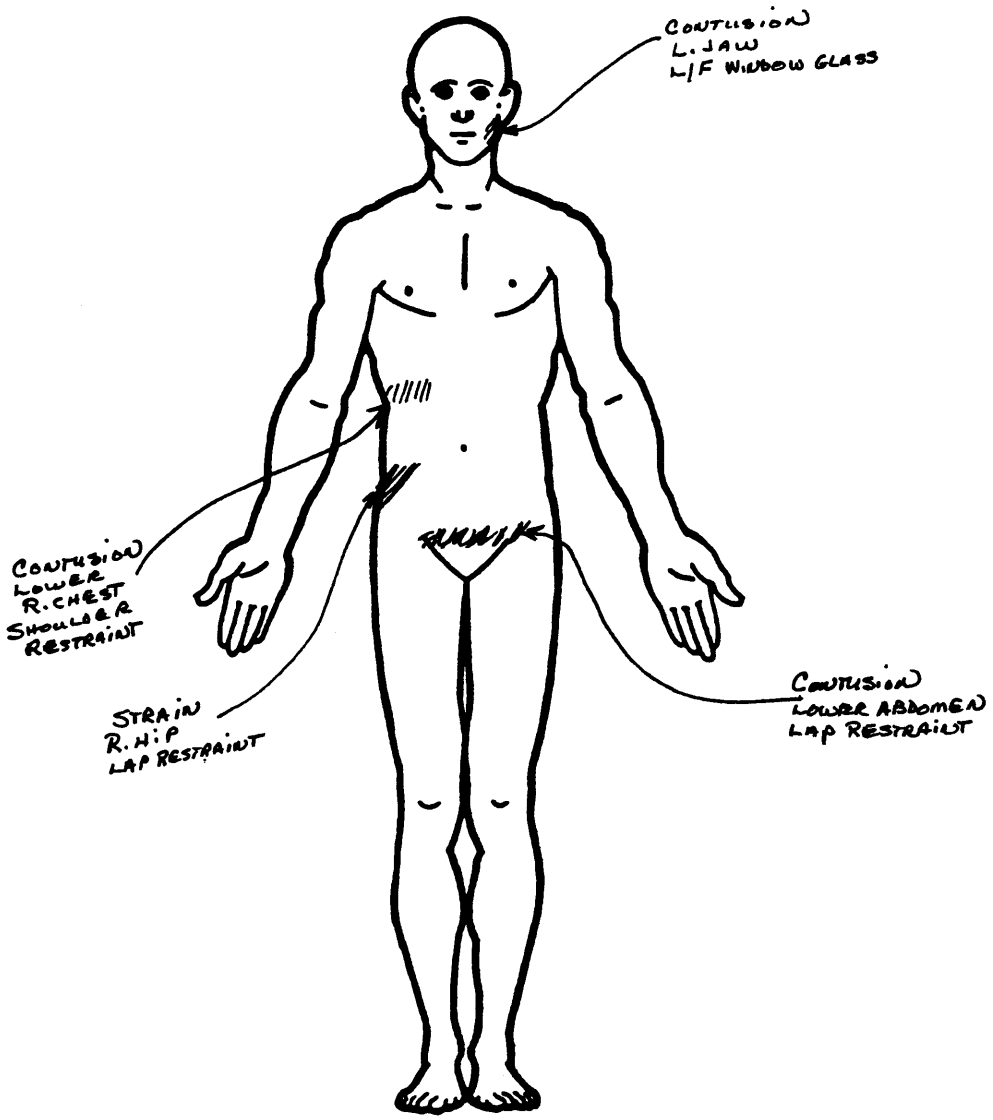
Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

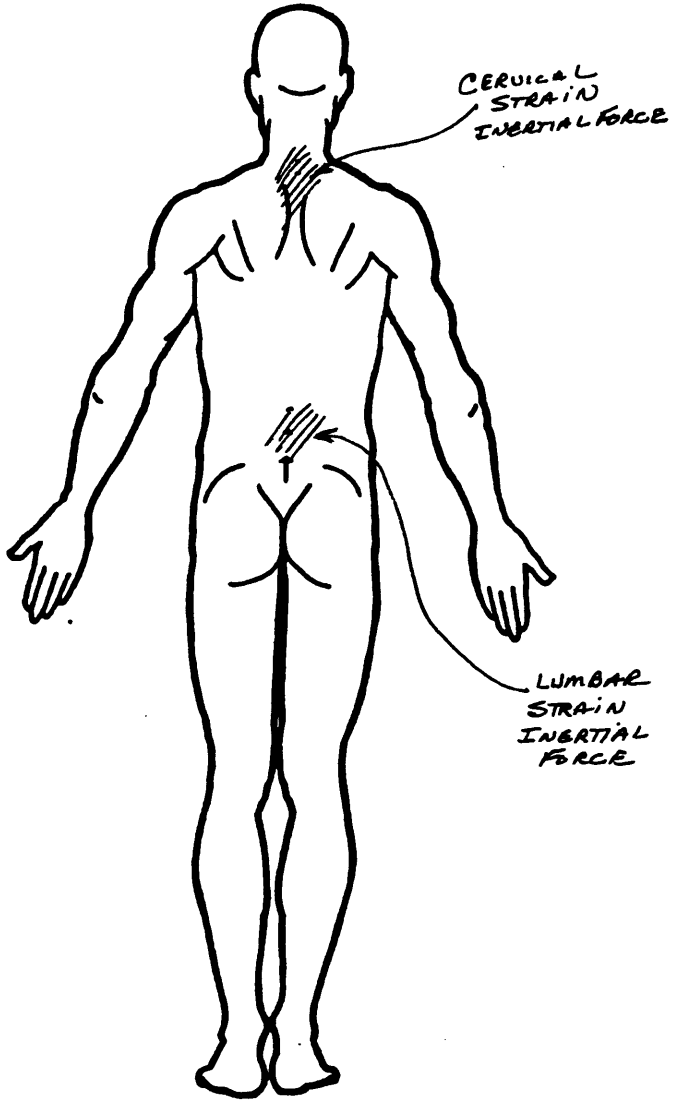
	Source of Injury Data	O.I.C.-A.I.S Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect	Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number	ICD-9
1st	5. 3	6. 2	7. 9	8. 04	9. 02	10. 1	11. 2	12. 25	13. 1	14. 1	15. 00	920
2nd	16. 3	17. 6	18. 4	19. 02	20. 78	21. 1	22. 6	23. 92	24. 1	25. 3	26. 00	847.0
3rd	27. 3	28. 6	29. 4	30. 06	31. 78	32. 1	33. 8	34. 92	35. 1	36. 3	37. 00	847.2
4th	38. 7	39. 4	40. 9	41. 04	42. 02	43. 1	44. 1	45. 41	46. 1	47. 1	48. 00	922.1
5th	49. 7	50. 5	51. 9	52. 04	53. 02	54. 1	55. 4	56. 41	57. 1	58. 1	59. 00	922.2
6th	60. 3	61. 8	62. 4	63. 06	64. 02	65. 1	66. 1	67. 41	68. 1	69. 1	70. 00	843.9
7th	71. __	72. __	73. __	74. ___	75. ___	76. __	77. __	78. ___	79. __	80. __	81. ___	
8th	82. __	83. __	84. __	85. ___	86. ___	87. __	88. __	89. ___	90. __	91. __	92. ___	
9th	93. __	94. __	95. __	96. ___	97. ___	98. __	99. __	100. ___	101. __	102. __	103. ___	
10th	104. __	105. __	106. __	107. ___	108. ___	109. __	110. __	111. ___	112. __	113. __	114. ___	

This report is authorized by P.L. 89-563, Title 1, Section 106, 108, and 112. While you are not required to respond, your cooperation is needed to make the results of this data collection effort comprehensive, accurate, and timely.

OFFICIAL INJURY DATA — SOFT TISSUE INJURIES

Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)





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SOURCE OF INJURY DATA

OFFICIAL
(1) Autopsy records with or without hospital/ medical records
(2) Hospital/medical records other than emergency room (e.g., discharge summary)
(3) Emergency room records only (including associated X-rays or other lab reports)
(4) Private physician, walk-in or emergency clinic

UNOFFICIAL
(5) Lay coroner report
(6) E.M.S. personnel
(7) Interviewee
(8) Other source (specify):

(9) Police

INJURY SOURCE

FRONT
(01) Windshield
(02) Mirror
(03) Sunvisor
(04) Steering wheel rim
(05) Steering wheel hub/spoke
(06) Steering wheel (combination of codes 04 and 05)
(07) Steering column, transmission selector lever, other attachment
(08) Add on equipment (e.g., CB, tape deck, air conditioner)
(09) Left instrument panel and below
(10) Center instrument panel and below
(11) Right instrument panel and below
(12) Glove compartment door
(13) Knee bolster
(14) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
(15) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
(16) Driver side air bag compartment cover
(17) Passenger side air bag compartment cover
(18) Windshield reinforced by exterior object (specify):
(19) Other front object (specify):

LEFT SIDE
(20) Left side interior surface, excluding hardware or armrests
(21) Left side hardware or armrest
(22) Left A (A1/A2)-pillar
(23) Left B-pillar
(24) Other left pillar (specify):

(25) Left side window glass or frame
(26) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
(27) Other left side object (specify):

(28) Left side window sill

RIGHT SIDE
(30) Right side interior surface, excluding hardware or armrests
(31) Right side hardware or armrest
(32) Right A (A1/A2)-pillar
(33) Right B-pillar
(34) Other right pillar (specify):

(35) Right side window glass or frame
(36) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
(37) Other right side object (specify):

(38) Right side window sill

INTERIOR
(40) Seat, back support
(41) Belt restraint webbing/buckle
(42) Belt restraint B-pillar or door frame attachment point
(43) Other restraint system component (specify):
(44) Head restraint system
(45) Air bag (use codes "16" and "17" for injuries sustained from air bag compartment covers)
(46) Other occupants (specify):

(47) Interior loose objects
(48) Child safety seat (specify):

(49) Other interior object (specify):

ROOF
(50) Front header
(51) Rear header
(52) Roof left side rail
(53) Roof right side rail
(54) Roof or convertible top

FLOOR
(56) Floor (including toe pan)
(57) Floor or console mounted transmission lever, including console
(58) Parking brake handle
(59) Foot controls including parking brake

REAR
(60) Backlight (rear window)
(61) Backlight storage rack, door, etc.
(62) Other rear object (specify):

EXTERIOR of OCCUPANT'S VEHICLE
(65) Hood
(66) Outside hardware (e.g., outside mirror, antenna)
(67) Other exterior surface or tires (specify):
(68) Unknown exterior objects

EXTERIOR OF OTHER MOTOR VEHICLE
(70) Front bumper
(71) Hood edge
(72) Other front of vehicle (specify):

(73) Hood
(74) Hood ornament
(75) Windshield, roof rail, A-pillar
(76) Side surface
(77) Side mirrors
(78) Other side protrusions (specify)

(79) Rear surface
(80) Undercarriage
(81) Tires and wheels
(82) Other exterior of other motor vehicle (specify):

(83) Unknown exterior of other motor vehicle

OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT
(84) Ground
(85) Other vehicle or object (specify)

(86) Unknown vehicle or object

NONCONTACT INJURY
(90) Fire in vehicle
(91) Flying glass
(92) Other noncontact injury source (specify): INERTIAL FORCE
(93) Air bag exhaust gases
(97) Injured, unknown source

INJURY SOURCE CONFIDENCE LEVEL

(1) Certain
(2) Probable
(3) Possible
(9) Unknown

DIRECT/INDIRECT INJURY

(1) Direct contact injury
(2) Indirect contact injury
(3) Noncontact injury
(7) Injured, unknown source

OCCUPANT INJURY CLASSIFICATION

Body Region

(1) Head
(2) Face
(3) Neck
(4) Thorax
(5) Abdomen
(6) Spine
(7) Upper Extremity
(8) Lower Extremity
(9) Unspecified

Type of Anatomic Structure

(1) Whole Area
(2) Vessels
(3) Nerves
(4) Organs (includes muscles/ ligaments)
(5) Skeletal (includes joints)
(6) Head - LOC
(9) Skin

Specific Anatomic Structure

Whole Area
(02) Skin - Abrasion
(04) Skin - Contusion
(06) Skin - Laceration
(08) Skin - Avulsion
(10) Amputation
(20) Burn
(30) Crush
(40) Degloving
(50) Injury - NFS
(90) Trauma, other than mechanical

Head - LOC
(02) Length of LOC
(04, 06, 08) Level of Consciousness
(10) Concussion

Spine
(02) Cervical
(04) Thoracic
(06) Lumbar

Vessels, Nerves, Organs, Bones, Joints are assigned consecutive two digit numbers beginning with 02

Level of Injury

Specific injuries are assigned consecutive two-digit numbers beginning with 02.

To the extent possible, within the organizational framework of the AIS, 00 is assigned to an injury NFS as to severity or where only one injury is given in the dictionary for that anatomic structure. 99 is assigned to any injury NFS as to lesion or severity.

Abbreviated Injury Scale

(1) Minor injury
(2) Moderate injury
(3) Serious injury
(4) Severe injury
(5) Critical injury
(6) Maximum (untreatable)
(7) Injured, unknown severity

Aspect

(1) Right
(2) Left
(3) Bilateral
(4) Central
(5) Anterior
(6) Posterior
(7) Superior
(8) Inferior
(9) Unknown
(0) Whole region

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OFFICIAL INJURY DATA — SKELETAL INJURIES

Restrained?

___ No

___ Yes

Blood Alcohol Level (mg/dl)

BAL = ____

Glasgow Coma Scale Score

GCSS = ____

Units of Blood Given

Units = ____

Arterial Blood Gases

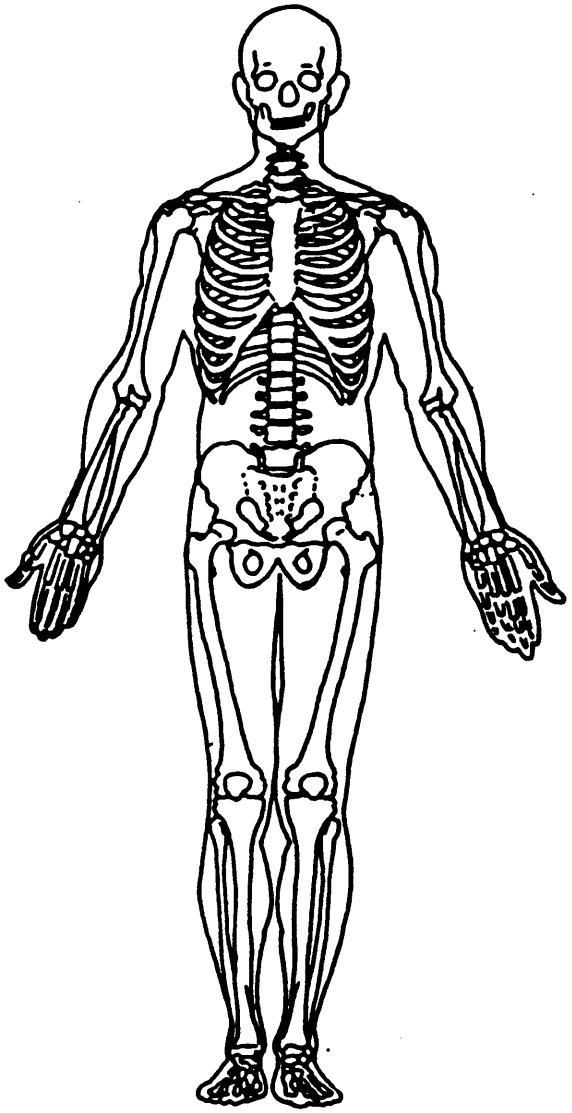
pH = __.__

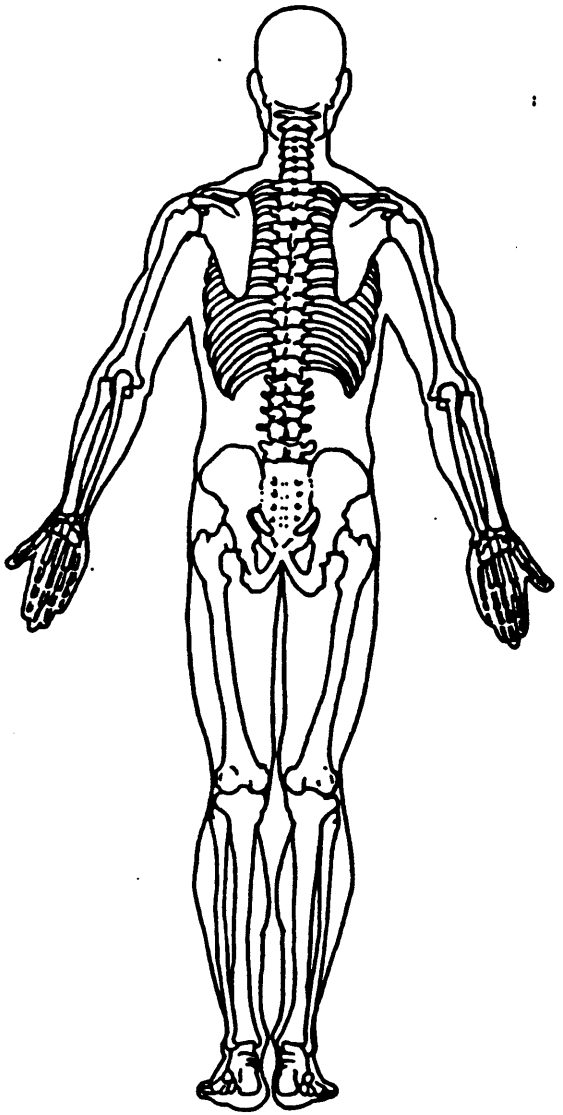
PO_2 = ____

PCO_2 ____

HCO_3 ____

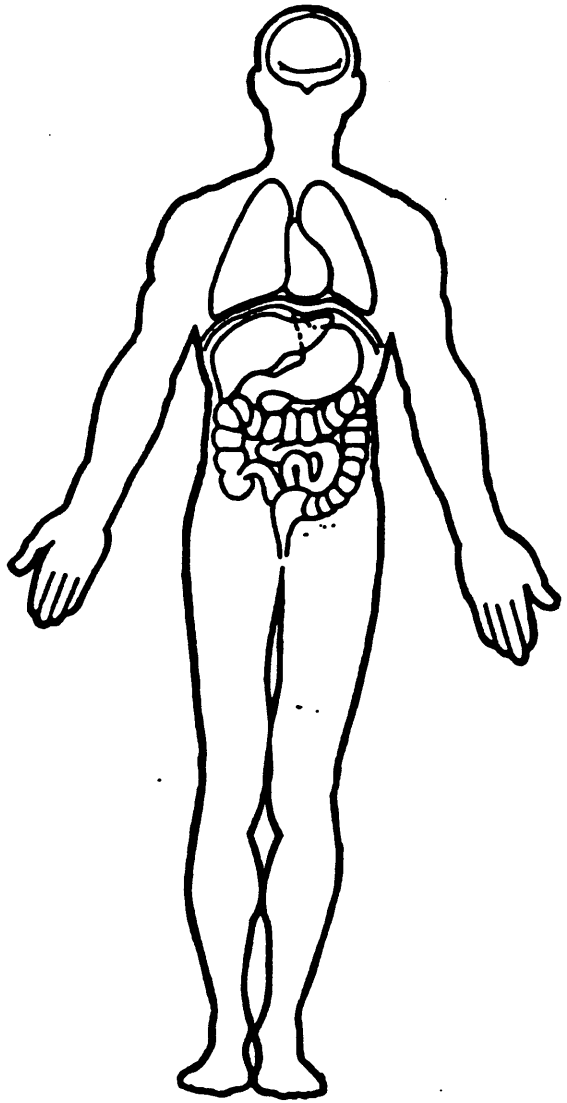
Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)

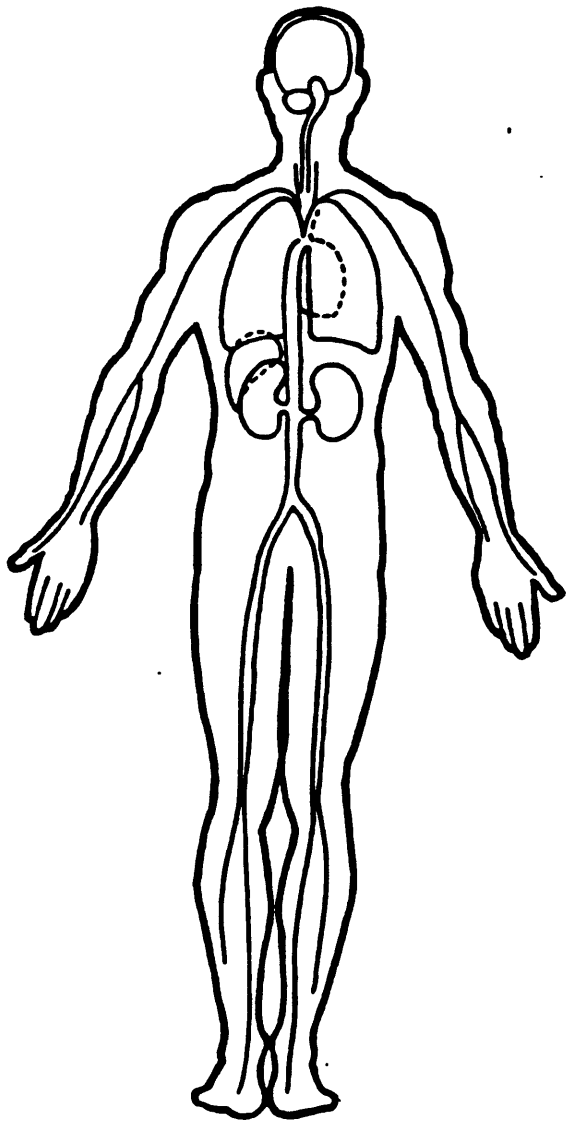




OFFICIAL INJURY DATA —INTERNAL INJURIES

Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)





U.S. Department of Transportation
National Highway Traffic Safety Administration

OCCUPANT ASSESSMENT FORM

Form Approved
O.M.B. No. 2127-0021

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ____
2. Case Number - Stratum DSI-93-AB-0007
3. Vehicle Number 01
4. Occupant Number 02

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 11
   Code actual age at time of accident.
   (00) Less than one year old (specify by month): _____
   (97) 97 years and older
   (99) Unknown

6. Occupant's Sex 1
   (1) Male
   (2) Female
   (9) Unknown

7. Occupant's Height 147
   Code actual height to the nearest centimeter.
   (999) Unknown

   58 inches X 2.54 = 147 centimeters

8. Occupant's Weight 039
   Code actual weight to the nearest kilogram.
   (999)Unknown

   086 pounds X .4536 = 039 kilograms

9. Occupant's Role 2
   (1) Driver
   (2) Passenger
   (9) Unknown

OCCUPANT'S SEATING

10. Occupant's Seat Position 13
    Front Seat
    (11) Left side
    (12) Middle
    (13) Right side
    (14) Other (specify): _____
    (15) On or in the lap of another occupant

    Second Seat
    (21) Left side
    (22) Middle
    (23) Right side
    (24) Other (specify): _____
    (25) On or in the lap of another occupant

    Third Seat
    (31) Left side
    (32) Middle
    (33) Right side
    (34) Other (specify): _____
    (35) On or in the lap of another occupant

    Fourth Seat
    (41) Left side
    (42) Middle
    (43) Right side
    (44) Other (specify): _____
    (45) On or in the lap of another occupant

    (97) In or on unenclosed area
    (98) Other seat (specify): _____
    (99) Unknown

11. Occupant's Posture 0
    (0) Normal posture

    Abnormal posture
    (1) Kneeling or standing on seat
    (2) Lying on or across seat
    (3) Kneeling, standing or sitting in front of seat
    (4) Sitting sideways or turned to talk with another occupant or to look out a rear window
    (5) Sitting on a console
    (6) Lying back in a reclined seat position
    (7) Bracing with feet or hands on a surface in front of seat
    (8) Other abnormal posture (specify): _____
    (9) Unknown

This report is authorized by P.L. 89-563, Title 1, Section 106, 108, and 112. While you are not required to respond, your cooperation is needed to make the results of this data collection effort comprehensive, accurate, and timely.

EJECTION/ENTRAPMENT

12. Ejection ∅
    (0) No ejection
    (1) Complete ejection
    (2) Partial ejection
    (3) Ejection, unknown degree
    (9) Unknown

13. Ejection Area ∅
    (0) No ejection
    (1) Windshield
    (2) Left front
    (3) Right front
    (4) Left rear
    (5) Right rear
    (6) Rear
    (7) Roof
    (8) Other area (e.g., back of pickup, etc.) (specify):_____
    (9) Unknown

14. Ejection Medium ∅
    (0) No ejection
    (1) Door/hatch/tailgate
    (2) Nonfixed roof structure
    (3) Fixed glazing
    (4) Nonfixed glazing (specify):
    _____
    (5) Integral structure
    (8) Other medium (specify):
    _____
    (9) Unknown

15. Medium Status (Immediately Prior To Impact) ∅
    (0) No ejection
    (1) Open
    (2) Closed
    (3) Integral structure
    (9) Unknown

16. Entrapment ∅
    (NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)
    (0) Not entrapped
    (1) Entrapped
    (9) Unknown

RESTRAINT SYSTEM EVALUATION

17. Manual (Active) Belt System Availability 4
(0) None available
(1) Belt removed/destroyed
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt available—type unknown

Integral Belt Partially Destroyed
(6) Shoulder belt (lap belt destroyed/removed)
(7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify):

(9) Unknown

18. Manual (Active) Belt System Use Ø4
(00) None used, not available, or belt removed/destroyed
(01) Inoperative (specify):

(02) Shoulder belt
(03) Lap belt
(04) Lap and shoulder belt
(05) Belt used—type unknown
(08) Other belt used (specify):

(12) Shoulder belt used with child safety seat
(13) Lap belt used with child safety seat
(14) Lap and shoulder belt used with child safety seat
(15) Belt used with child safety seat—type unknown
(18) Other belt used with child safety seat (specify):
(99) Unknown if belt used

19. Proper Use of Manual (Active) Belts 1
(0) None used or not available
(1) Belt used properly
(2) Belt used properly with child safety seat

Belt Used Improperly
(3) Shoulder belt worn under arm
(4) Shoulder belt worn behind back or seat
(5) Belt worn around more than one person
(6) Lap belt worn on abdomen
(7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of manual belt system (specify):

(9) Unknown

20. Manual (Active) Belt Failure Modes During Accident 1
(0) No manual belt used
(1) No manual belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):

(8) Other manual belt failure (specify):

(9) Unknown

21. Air Bag System Availability/Function 1
(0) Not equipped/not available
(1) Air bag

Non-functional
(2) Air bag disconnected (specify):

(3) Air bag not reinstalled
(9) Unknown

22. Air Bag System Deployment 1
(0) Not equipped/not available
(1) Air bag deployed during accident (as a result of impact)
(2) Air bag deployed inadvertently just prior to accident
(3) Air bag deployed, accident sequence undetermined
(4) Nondeployed
(5) Unknown if deployed
(6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(9) Unknown

23. Are There Indications of Air Bag System Failure? 1
(0) Not equipped/not available
(1) No
(2) Yes (specify):

(9) Unknown

Note: See Variables 44 through 48 (Page 5) for Information on Automatic Belts

24. Police Reported Restraint Use 4
(0) None used
(1) Police did not indicate restraint use
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt used, type not specified
(6) Child safety seat
(7) Other or automatic restraint (specify):

(8) Restrained, type unknown
(9) Police indicated "unknown"

HEAD RESTRAINT AND SEAT EVALUATION

25. Head Restraint Type/Damage by Occupant at This Occupant Position: 3
    (0) No head restraints
    (1) Integral—no damage
    (2) Integral—damaged during accident
    (3) Adjustable—no damage
    (4) Adjustable—damaged during accident
    (5) Add-on—no damage
    (6) Add-on—damaged during accident
    (8) Other (specify): _____
    (9) Unknown

26. Seat Type (this Occupant Position): 06
    (00) Occupant not seated or no seat
    (01) Bucket
    (02) Bucket with folding back
    (03) Bench
    (04) Bench with separate back cushions
    (05) Bench with folding back(s)
    (06) Split bench with separate back cushions
    (07) Split bench with folding back(s)
    (08) Pedestal (i.e., column supported)
    (09) Other seat type (specify): _____
    (10) Box mounted seat (i.e., van type)
    (99) Unknown

27. Seat Performance (this Occupant Position): 1
    (0) Occupant not seated or no seat
    (1) No seat performance failure(s)
    (2) Seat adjusters failed
    (3) Seat back folding locks or "seat back" failed
    (4) Seat track/anchors failed
    (5) Deformed by impact of occupant
    (6) Deformed by passenger compartment intrusion (specify): _____
    (7) Combination of above (specify): _____
    (8) Other (specify): _____
    (9) Unknown

CHILD SAFETY SEAT

28. Child Safety Seat Make/Model ϕ ϕ ϕ
(000) No child safety seat
Applicable codes are found in your NASS CDS Data Collection, Coding and Editing
(950) Built-in child safety seat
(997) Other make/model (specify):
_____
(998) Unknown make/model
(999) Unknown if child safety seat used

29. Type of Child Safety Seat ϕ
(0) No child safety seat
(1) Infant seat
(2) Toddler seat
(3) Convertible seat
(4) Booster seat
(7) Other type child safety seat (specify):
_____
(8) Unknown child safety seat type
(9) Unknown if child safety seat used

30. Child Safety Seat Orientation ϕ ϕ
(00) No child safety seat

Designed for Rear Facing for This Age/Weight
(01) Rear facing
(02) Forward facing
(08) Other orientation (specify):
_____
(09) Unknown orientation

Designed For Forward Facing for This Age/Weight
(11) Rear facing
(12) Forward facing
(18) Other orientation (specify):
_____
(19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
(21) Rear facing
(22) Forward facing
(28) Other orientation (specify):
_____
(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage ϕ ϕ

32. Child Safety Seat Shield Usage ϕ ϕ

33. Child Safety Seat Tether Usage ϕ ϕ

Note: Options below applicable to Variables OA31-OA33.
(00) No child safety seat

Not Designed With Harness/Shield/Tether
(01) After market harness/shield/tether added, not used
(02) After market harness/shield/tether used
(03) Child safety seat used, but no after market harness/shield/tether added
(09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether
(11) Harness/shield/tether not used
(12) Harness/shield/tether used
(19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether
(21) Harness/shield/tether not used
(22) Harness/shield/tether used
(29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES

34. Injury Severity (Police Rating) 1

(0) O - No injury
(1) C - Possible injury
(2) B - Nonincapacitating injury
(3) A - Incapacitating injury
(4) K - Killed
(5) U - Injury, severity unknown
(6) Died prior to accident
(9) Unknown

35. Treatment - Mortality 4
(0) No treatment
(1) Fatal
(2) Fatal - ruled disease (specify):
_____

Nonfatal
(3) Hospitalization
(4) Transported and released
(5) Treatment at scene - nontransported
(6) Treatment later
(8) Treatment - other (specify):
_____
(9) Unknown

36. Type Of Medical Facility (for Initial Treatment) 2
(0) Not treated at a medical facility
(1) Trauma center
(2) Hospital
(3) Medical clinic
(4) Physician's office
(5) Treatment later at medical facility
(8) Other (specify):
_____
(9) Unknown

37. Hospital Stay 0 0
(00) Not Hospitalized
_____Code the number of days (up through 60) that the occupant stayed in hospital.
(61) 61 days or more
(99) Unknown

99. Case Occupant 0
(0) Not the Case Occupant
(1) This is the Case Occupant
(2) This is the Case Occupant in another case.

38. Working Days Lost 9 7
_____Code the number of days (up through 60) that the occupant lost from work due to the accident
(00) No working days lost
(61) 61 days or more
(62) Fatally injured
(97) Not working prior to accident
(99) Unknown

STOP - GO TO VARIABLE 44 ON PAGE 7

VARIABLES 39 THROUGH 43 ARE COMPLETED BY THE ZONE CENTER

39. Time to Death 0 0
_____Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 +n up through 30 days = 60)
(00) Not fatal
(96) Fatal - ruled disease
(99) Unknown

40. 1st Medically Reported Cause of Death 0 0

41. 2nd Medically Reported Cause of Death 0 0

42. 3rd Medically Reported Cause of Death 0 0
_____Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
(00) Not fatal or no additional causes
(96) Mode of death given but specific injuries are not linked to cause of death. (specify):
_____
(97) Other result (includes fatal ruled disease) (specify):
_____
(99) Unknown

43. Number of Recorded Injuries for This Occupant 0 3
_____Code the actual number of injuries recorded for this occupant.
(00) No recorded injuries
(97) Injured, details unknown
(99) Unknown if injured

AUTOMATIC BELT SYSTEM

44. Automatic (Passive) Belt System Availability/ Function — ϕ
(0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional
(4) Automatic belts destroyed or rendered inoperative
(9) Unknown

45. Automatic (Passive) Belt System Use — ϕ
(0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):

(3) Automatic belt use unknown
(9) Unknown

46. Automatic (Passive) Belt System Type — ϕ
(0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

47. Proper Use of Automatic (Passive Belt System — ϕ
(0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly
(3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of automatic belt system (specify):
(9) Unknown

48. Automatic (Passive) Belt Failure Modes During Accident — ϕ
(0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):
(8) Other automatic belt failure (specify):

(9) Unknown

49. Seat Orientation (this Occupant Position) — 1
(0) Occupant not seated or no seat
(1) Forward facing seat
(2) Rear facing seat
(3) Side facing seat (inward)
(4) Side facing seat (outward)
(8) Other (specify):

(9) Unknown

STOP - VARIABLES 50 THROUGH 52 ARE COMPLETED BY THE ZONE CENTER

TRAUMA DATA

50. Glasgow Coma Scale (GCS) Score (at Medical Facility) — ϕ2
(00) Not injured
(01) Injured - not treated at medical facility
(02) No GCS Score at medical facility
(03-15) Code the actual value of the initial GCS Score recorded at medical facility.
(97) Injured, details unknown
(99) Unknown if injured

51. Was the Occupant Given Blood? — 1
(1) No - blood not given
(2) Yes - blood given (specify units):
(9) Unknown if blood given

52. Arterial Blood Gases (ABG) - HCO_3 — ϕ1
(00) Not injured
(01) Injured, ABGs not measured or reported
(02-50) Code the actual value of the HCO_3
(96) ABGs reported , HCO_3 unknown
(97) Injured, details unknown
(99) Unknown if injured

ARE ALL APPLICABLE MEDICAL RECORDS INCLUDED WITH INITIAL SUBMISSION? NO [X] YES [ ]

UPDATE CANDIDATE? NO [X] YES [ ]

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U.S. Department of Transportation
National Highway Traffic Safety Administration

OCCUPANT INJURY FORM

Form Approved
O.M.B. No. 2127-0021
NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ___	3. Vehicle Number 01
2. Case Number - Stratum DSI-93-AB-007	4. Occupant Number 02

INJURY DATA

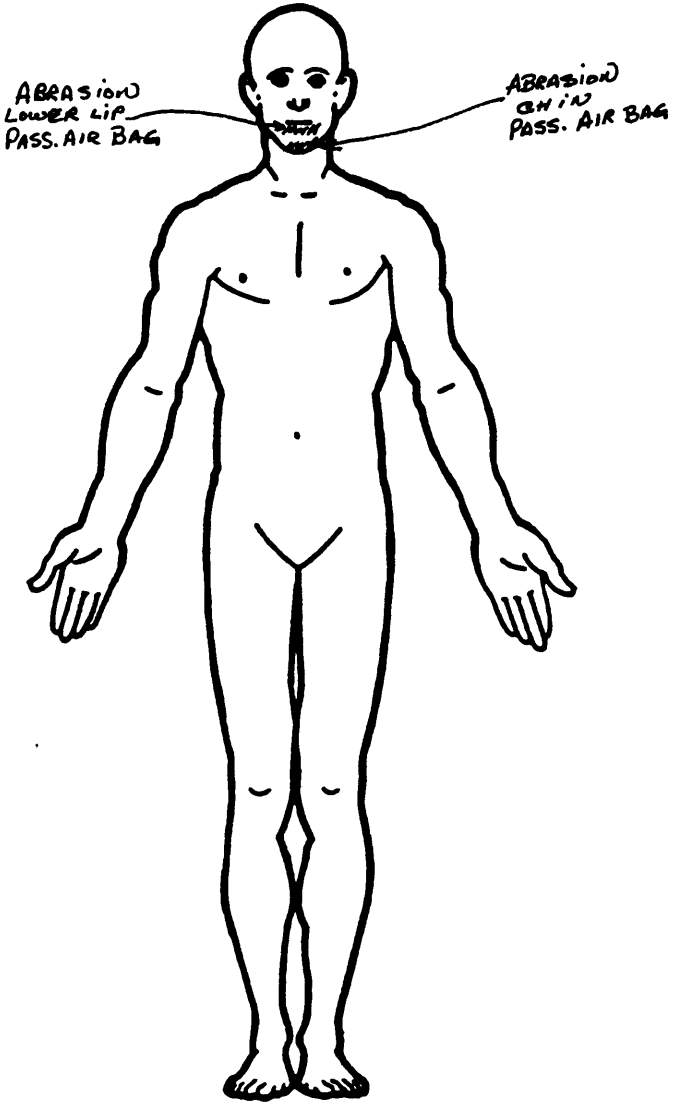
Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

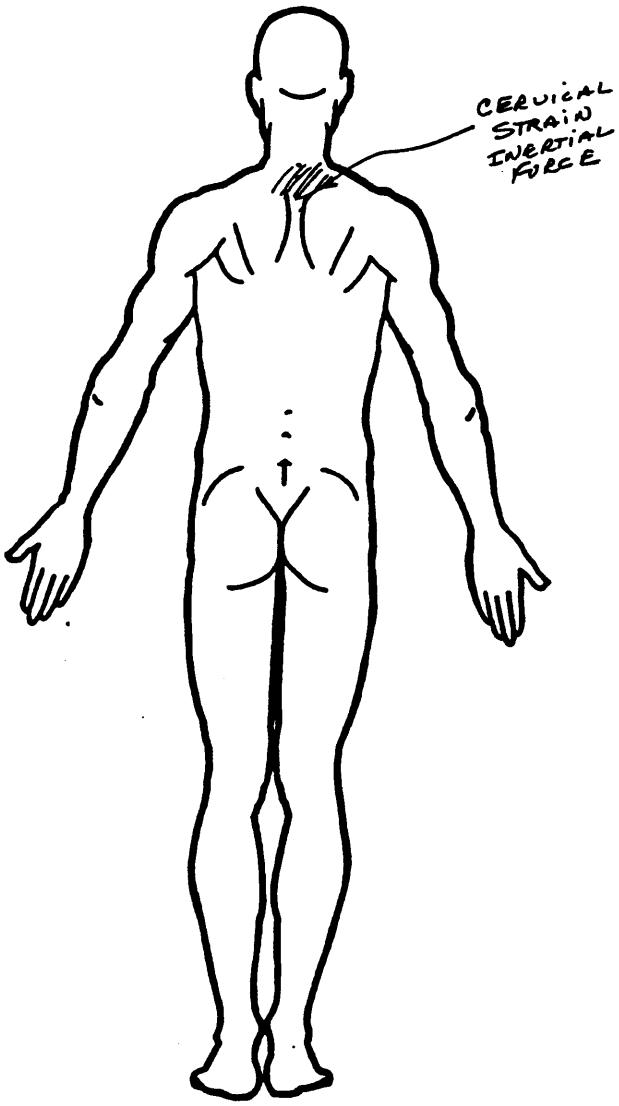
	Source of Injury Data	O.I.C.-A.I.S Body Region	Type of Anatomic Structure	Specific Anatomic Structure	Level of Injury	A.I.S. Severity	Aspect	Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion Number	ICD-9
1st	5. 3	6. 2	7. 9	8. 02	9. 02	10. 1	11. 8	12. 45	13. 1	14. 1	15. 00	910
2nd	16. 7	17. 2	18. 9	19. 02	20. 02	21. 1	22. 8	23. 45	24. 1	25. 1	26. 00	910
3rd	27. 3	28. 6	29. 4	30. 02	31. 78	32. 1	33. 6	34. 92	35. 1	36. 3	37. 00	847.0
4th	38. ___	39. ___	40. ___	41. ___	42. ___	43. ___	44. ___	45. ___	46. ___	47. ___	48. ___	
5th	49. ___	50. ___	51. ___	52. ___	53. ___	54. ___	55. ___	56. ___	57. ___	58. ___	59. ___	
6th	60. ___	61. ___	62. ___	63. ___	64. ___	65. ___	66. ___	67. ___	68. ___	69. ___	70. ___	
7th	71. ___	72. ___	73. ___	74. ___	75. ___	76. ___	77. ___	78. ___	79. ___	80. ___	81. ___	
8th	82. ___	83. ___	84. ___	85. ___	86. ___	87. ___	88. ___	89. ___	90. ___	91. ___	92. ___	
9th	93. ___	94. ___	95. ___	96. ___	97. ___	98. ___	99. ___	100. ___	101. ___	102. ___	103. ___	
10th	104. ___	105. ___	106. ___	107. ___	108. ___	109. ___	110. ___	111. ___	112. ___	113. ___	114. ___	

This report is authorized by P.L. 89-563, Title 1, Section 106, 108, and 112. While you are not required to respond, your cooperation is needed to make the results of this data collection effort comprehensive, accurate, and timely.

OFFICIAL INJURY DATA — SOFT TISSUE INJURIES

Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)





SOURCE OF INJURY DATA

OFFICIAL
(1) Autopsy records with or without hospital/ medical records
(2) Hospital/medical records other than emergency room (e.g., discharge summary)
(3) Emergency room records only (including associated X-rays or other lab reports)
(4) Private physician, walk-in or emergency clinic

UNOFFICIAL
(5) Lay coroner report
(6) E.M.S. personnel
(7) Interviewee
(8) Other source (specify):

_____

(9) Police

INJURY SOURCE

FRONT
(01) Windshield
(02) Mirror
(03) Sunvisor
(04) Steering wheel rim
(05) Steering wheel hub/spoke
(06) Steering wheel (combination of codes 04 and 05)
(07) Steering column, transmission selector lever, other attachment
(08) Add on equipment (e.g., CB, tape deck, air conditioner)
(09) Left instrument panel and below
(10) Center instrument panel and below
(11) Right instrument panel and below
(12) Glove compartment door
(13) Knee bolster
(14) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
(15) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
(16) Driver side air bag compartment cover
(17) Passenger side air bag compartment cover
(18) Windshield reinforced by exterior object (specify):_____
(19) Other front object (specify):

_____

LEFT SIDE
(20) Left side interior surface, excluding hardware or armrests
(21) Left side hardware or armrest
(22) Left A (A1/A2)-pillar
(23) Left B-pillar
(24) Other left pillar (specify):

_____

(25) Left side window glass or frame
(26) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
(27) Other left side object (specify):

_____

(28) Left side window sill

RIGHT SIDE
(30) Right side interior surface, excluding hardware or armrests
(31) Right side hardware or armrest
(32) Right A (A1/A2)-pillar
(33) Right B-pillar
(34) Other right pillar (specify):

_____

(35) Right side window glass or frame
(36) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
(37) Other right side object (specify):

_____

(38) Right side window sill

INTERIOR
(40) Seat, back support
(41) Belt restraint webbing/buckle
(42) Belt restraint B-pillar or door frame attachment point
(43) Other restraint system component (specify):_____
(44) Head restraint system
(45) Air bag (use codes "16" and "17" for injuries sustained from air bag compartment covers)
(46) Other occupants (specify):

_____

(47) Interior loose objects
(48) Child safety seat (specify):

_____

(49) Other interior object (specify):

_____

ROOF
(50) Front header
(51) Rear header
(52) Roof left side rail
(53) Roof right side rail
(54) Roof or convertible top

FLOOR
(56) Floor (including toe pan)
(57) Floor or console mounted transmission lever, including console
(58) Parking brake handle
(59) Foot controls including parking brake

REAR
(60) Backlight (rear window)
(61) Backlight storage rack, door, etc.
(62) Other rear object (specify):

_____

EXTERIOR of OCCUPANT'S VEHICLE
(65) Hood
(66) Outside hardware (e.g., outside mirror, antenna)
(67) Other exterior surface or tires (specify):_____
(68) Unknown exterior objects

EXTERIOR OF OTHER MOTOR VEHICLE
(70) Front bumper
(71) Hood edge
(72) Other front of vehicle (specify):

_____

(73) Hood
(74) Hood ornament
(75) Windshield, roof rail, A-pillar
(76) Side surface
(77) Side mirrors
(78) Other side protrusions (specify)

_____

(79) Rear surface
(80) Undercarriage
(81) Tires and wheels
(82) Other exterior of other motor vehicle (specify):

_____

(83) Unknown exterior of other motor vehicle

OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT
(84) Ground
(85) Other vehicle or object (specify)

_____

(86) Unknown vehicle or object

NONCONTACT INJURY
(90) Fire in vehicle
(91) Flying glass
(92) Other noncontact injury source (specify): INERTIAL FORCE
(93) Air bag exhaust gases
(97) Injured, unknown source

INJURY SOURCE CONFIDENCE LEVEL

(1) Certain
(2) Probable
(3) Possible
(9) Unknown

DIRECT/INDIRECT INJURY

(1) Direct contact injury
(2) Indirect contact injury
(3) Noncontact injury
(7) Injured, unknown source

OCCUPANT INJURY CLASSIFICATION

Body Region

(1) Head
(2) Face
(3) Neck
(4) Thorax
(5) Abdomen
(6) Spine
(7) Upper Extremity
(8) Lower Extremity
(9) Unspecified

Type of Anatomic Structure

(1) Whole Area
(2) Vessels
(3) Nerves
(4) Organs (includes muscles/ ligaments)
(5) Skeletal (includes joints)
(6) Head - LOC
(9) Skin

Specific Anatomic Structure

Whole Area
(02) Skin - Abrasion
(04) Skin - Contusion
(06) Skin - Laceration
(08) Skin - Avulsion
(10) Amputation
(20) Burn
(30) Crush
(40) Degloving
(50) Injury - NFS
(90) Trauma, other than mechanical

Head - LOC
(02) Length of LOC
(04, 06, 08) Level of Consciousness
(10) Concussion

Spine
(02) Cervical
(04) Thoracic
(06) Lumbar

Vessels, Nerves, Organs, Bones, Joints are assigned consecutive two digit numbers beginning with 02

Level of Injury

Specific injuries are assigned consecutive two-digit numbers beginning with 02.

To the extent possible, within the organizational framework of the AIS, 00 is assigned to an injury NFS as to severity or where only one injury is given in the dictionary for that anatomic structure. 99 is assigned to any injury NFS as to lesion or severity.

Abbreviated Injury Scale

(1) Minor injury
(2) Moderate injury
(3) Serious injury
(4) Severe injury
(5) Critical injury
(6) Maximum (untreatable)
(7) Injured, unknown severity

Aspect

(1) Right
(2) Left
(3) Bilateral
(4) Central
(5) Anterior
(6) Posterior
(7) Superior
(8) Inferior
(9) Unknown
(0) Whole region

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OFFICIAL INJURY DATA — SKELETAL INJURIES

Restrained?

___ No

___ Yes

Blood Alcohol Level (mg/dl)

BAL = ____

Glasgow Coma Scale Score

GCSS = ____

Units of Blood Given

Units = ____

Arterial Blood Gases

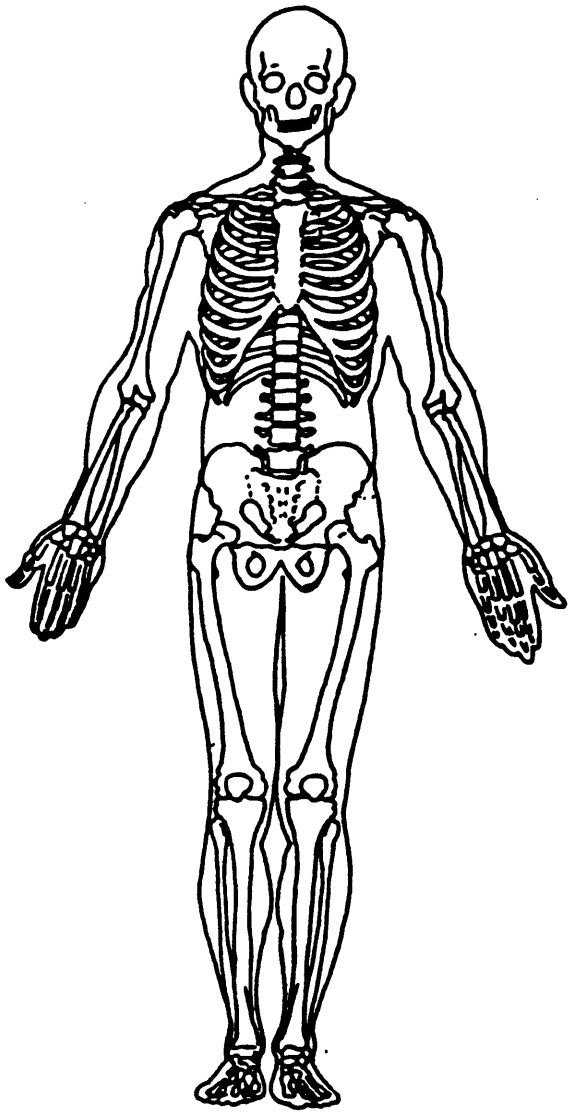
pH = __.__

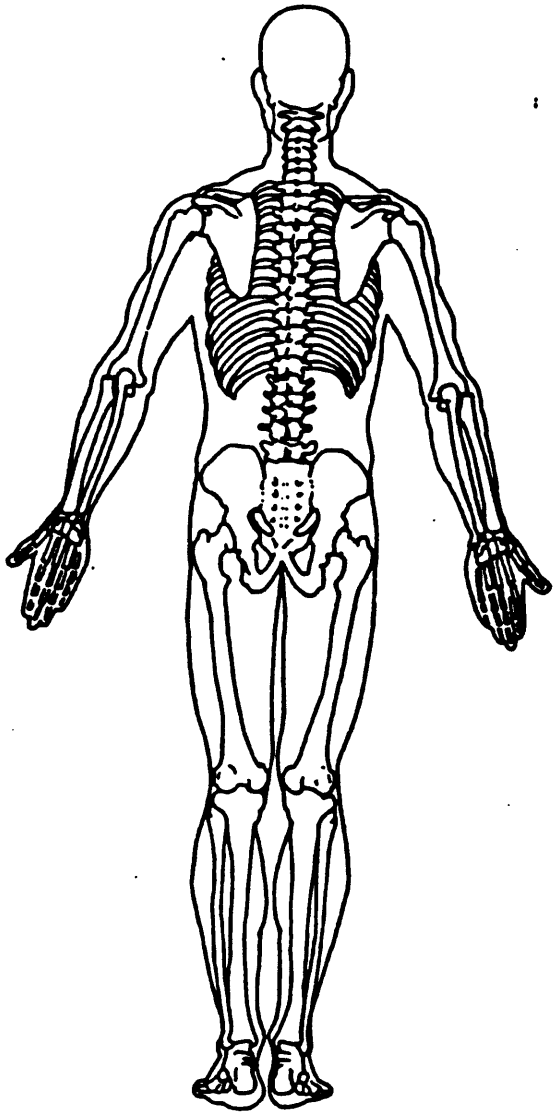
PO_2 = ____

PCO_2 ____

HCO_3 ____

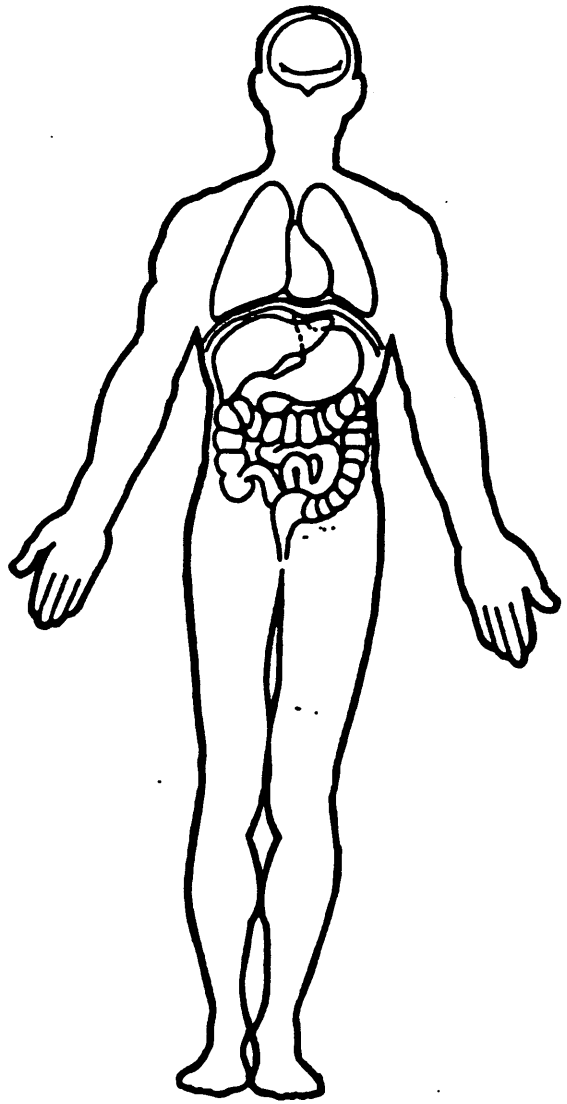
Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)

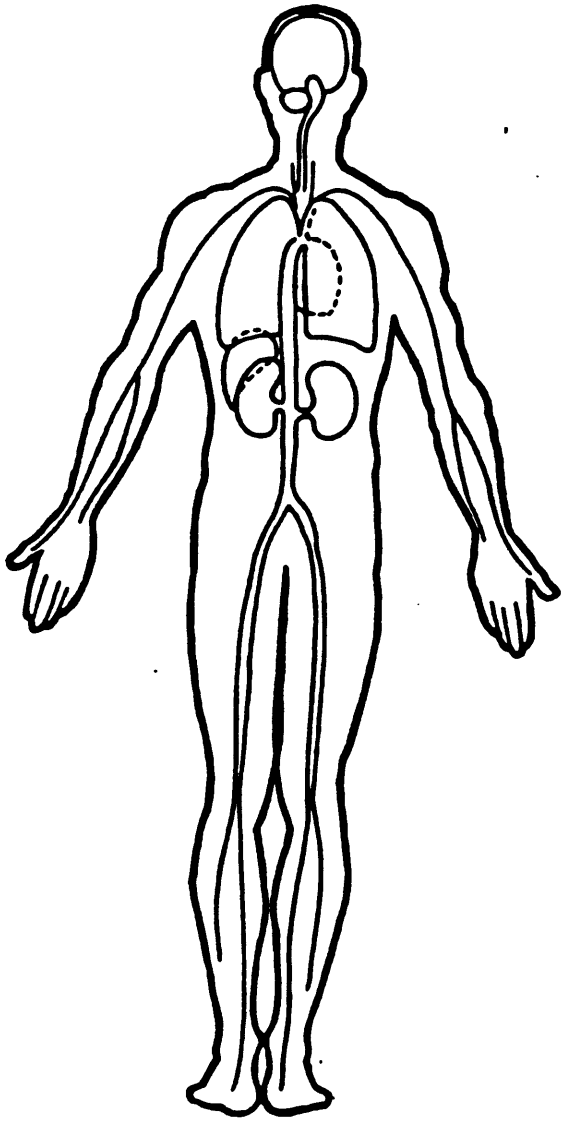




OFFICIAL INJURY DATA – INTERNAL INJURIES

Indicate the Location, Specific Anatomic Structure, Detail (size, depth, fracture type, head injury clinical signs and neurological deficits), and Source of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)





U.S. Department of Transportation
National Highway Traffic Safety Administration

GENERAL VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ____

2. Case Number - Stratum DSI-93-AB-0007

3. Vehicle Number 02

VEHICLE IDENTIFICATION

4. Vehicle Model Year 79
Code the last two digits of the model year
(99) Unknown

5. Vehicle Make (specify): 12
FORD
Applicable codes are found in your NASS Data Collection, Coding and Editing Manual.
(99) Unknown

6. Vehicle Model (specify): 003
MUSTANG II
Applicable codes are found in your NASS Data Collection, Coding and Editing Manual.
(999) Unknown

7. Body Type 03
Note: Applicable codes may be found on the back of this page.

8. Vehicle Identification Number
F9R03Y→→→→→→→→→→→
Left justify; Slash zeros and letter Z (0 and Z)
No VIN—Code all zeros
Unknown—Code all nine's

OFFICIAL RECORDS

9. Police Reported Vehicle Disposition 1
(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

10. Police Reported Travel Speed 072
Code to the nearest kph (NOTE: 000 means less than 0.5 kph)
(160) 159.5 kph and above
(999) Unknown
45 mph X 1.6093 = 072 kph

11. Police Reported Alcohol Presence 0
(0) No alcohol present
(1) Yes (alcohol present)
(7) Not reported
(8) No driver present
(9) Unknown

Note: See variables 37 through 55 (Page 4) for information on Other Drugs

12. Alcohol Test Result For Driver 96
Code actual value (decimal implied before first digit—0.xx)
(95) Test refused
(96) None given
(97) AC test performed, results unknown
(98) No driver present
(99) Unknown

Source: PAR

ACCIDENT RELATED

13. Speed Limit 080
(000) No statutory limit
Code posted or statutory speed limit in kph
(999) Unknown
50 mph X 1.6093 = 080 kph

14. Attempted Avoidance Maneuver 99
(00) No impact
(01) No avoidance actions
(02) Braking (no lockup)
(03) Braking (lockup)
(04) Braking (lockup unknown)
(05) Releasing brakes
(06) Steering left
(07) Steering right
(08) Braking and steering left
(09) Braking and steering right
(10) Accelerating
(11) Accelerating and steering left
(12) Accelerating and steering right
(97) No driver present
(98) Other action (specify):
(99) Unknown

15. Accident Type 64
Applicable codes may be found on the back of page two of this field form
(00) No impact
Code the number of the diagram that best describes the accident circumstance
(98) Other accident type (specify):
(99) Unknown

****** SKIP TO VARIABLE GV37 IF GV07 DOES NOT EQUAL 01-49 ******

CODES FOR BODY TYPE

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CDS APPLICABLE VEHICLES

Automobiles

(01) Convertible (excludes sun-roof, t-bar)
(02) 2-door sedan, hardtop, coupe
(03) 3-door/2-door hatchback
(04) 4-door sedan, hardtop
(05) 5-door/4-door hatchback
(06) Station wagon (excluding van and truck based)
(07) Hatchback, number of doors unknown
(08) Other automobile type (specify):

_____

(09) Unknown automobile type

Automobile Derivatives

(10) Auto based pickup (includes El Camino, Caballero, Ranchero, Brat, and Rabbit pickup)
(11) Auto based panel (cargo station wagon, auto based ambulance/hearse)
(12) Large limousine - more than four side doors or stretched chassis
(13) Three-wheel automobile or automobile derivative

Utility Vehicles (≤ 4,500 kgs GVWR)

(14) Compact utility (Jeep CJ-2 - CJ-7, Scrambler, Golden Eagle, Renegade, Laredo, Wrangler, Cherokee [84 and after], Dispatcher, Raider, Bronco II, Bronco [76 and before], Explorer, S-10 Blazer, Geo Tracker, Bravada, S-15 Jimmy, Thing, Pathfinder, Trooper, Trooper II, Rodeo, Amigo, Navajo, 4-Runner, Montero, Samurai, Sidekick, Rocky)
(15) Large utility (includes Jeep Cherokee [83 and before], Ramcharger, Trailduster, Bronco-fullsize [78 and after], fullsize Blazer, fullsize Jimmy, Landcruiser, Rover, Scout)
(16) Utility station wagon (Chevy Suburban, GMC Suburban, Travelall, Grand Wagoneer, includes suburban limousine)
(19) Utility, unknown body type

Van Based Light Trucks (≤ 4,500 kgs GVWR)

(20) Minivan (Chrysler Town and Country, Caravan, Grand Caravan, Voyager, Grand Voyager, Mini-Ram, Dodge/Plymouth Vista, Aerostar, Villager, Lumina APV, Trans Sport, Silhouette, Astro, Safari, Toyota Van, Toyota Minivan, Previa, Nissan Minivan, Quest, Mitsubishi Minivan, Vanagon/Camper.)
(21) Large van (B150-B350, Sportsman, Royal, Maxiwagon, Ram, Tradesman, Voyager [83 and before], E150-E350, Econoline, Clubwagon, Chateau, G10-G30, Chevy Van, Beauville, Sport Van, G15-G35, Rally Van, Vandura.)
(22) Step van or walk-in van (≤ 4,500 kgs GVWR)
(23) Van based motorhome (≤ 4,500 kgs GVWR)
(24) Van based school bus (≤ 4,500 kgs GVWR)
(25) Van based other bus (≤ 4,500 kgs GVWR)
(28) Other van type (Hi-Cube Van, Kary) (specify):

_____

(29) Unknown van type

Light Conventional Trucks (Pickup style cab, ≤ 4,500 kgs GVWR)

(30) Compact pickup (D50, Colt P/U, Ram 50, Dakota, Arrow Pickup [foreign], Ranger, Courier, S-10 , T-10, LUV, S-15, T-15, Sonoma, Datsun/Nissan Pickup, P'up, Mazda Pickup, Toyota Pickup, Mitsubishi Pickup)
(31) Large Pickup (Jeep Pickup, Comanche, Ram Pickup, D100-D350, W100-W350, F100-F350, C10-C35, K10-K35, R10-R35, V10-V35, Silverado, Sierra, R100-R500,)
(32) Pickup with slide-in camper
(33) Convertible pickup
(39) Unknown pickup style light conventional truck type

Other Light Trucks (≤ 4,500 kgs GVWR)

(40) Cab chassis based (includes rescue vehicles, light stake, dump, and tow truck)
(41) Truck based panel
(42) Light truck based motorhome (chassis mounted)
(45) Other light conventional truck type
(48) Unknown light truck type
(49) Unknown light vehicle type (automobile, utility, van, or light truck)

OTHER VEHICLES

Buses (Excludes Van Based)

(50) School bus (designed to carry students, not cross country or transit)
(58) Other bus type (e.g., transit, intercity, bus based motorhome) (specify):

_____

(59) Unknown bus type

Medium/Heavy Trucks (> 4,500 kgs GVWR)

(60) Step van (> 4,500 kgs GVWR)
(61) Single unit straight truck (4,500 kgs < GVWR ≤ 8,850 kgs)
(62) Single unit straight truck (8,850 kgs < GVWR ≤ 12,000 kgs)
(63) Single unit straight truck (> 12,000 kgs GVWR)
(64) Single unit straight truck, GVWR unknown
(65) Medium/heavy truck based motorhome
(67) Truck-tractor with no cargo trailer
(68) Truck-tractor pulling one trailer
(69) Truck-tractor pulling two or more trailers
(70) Truck-tractor (unknown if pulling trailer)
(78) Unknown medium/heavy truck type
(79) Unknown truck type (light/medium/heavy)

Motored Cycles (Does Not Include All-Terrain Vehicles/Cycles)

(80) Motorcycle
(81) Moped (motorized bicycle)
(82) Three-wheel motorcycle or moped
(88) Other motored cycle (minibike, motorscooter) (specify):_____
(89) Unknown motored cycle type

Other Vehicles

(90) ATV (All-Terrain Vehicle) and ATC (All-Terrain Cycle)
(91) Snowmobile
(92) Farm equipment other than trucks
(93) Construction equipment other than trucks
(97) Other vehicle type
(99) Unknown body type

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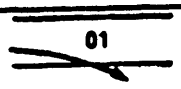
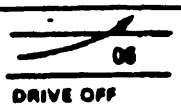
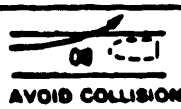
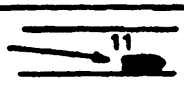
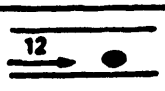
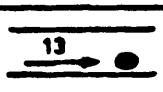
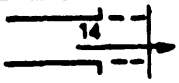
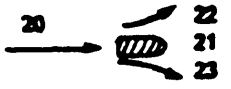
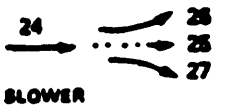
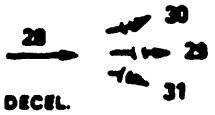
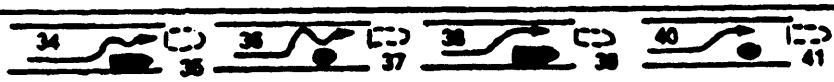
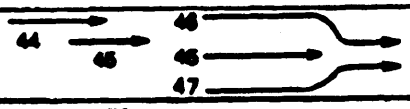
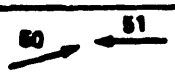
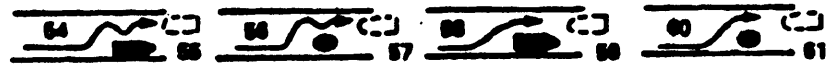
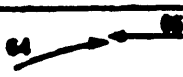
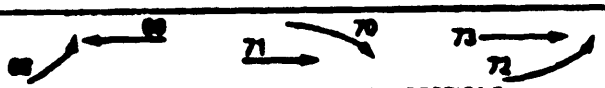
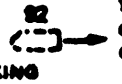
Category	Configuration	ACCIDENT TYPES (Includes Intent)				
I Single Driver	A Right Roadside Departure	 01 DRIVE OFF ROAD	02 CONTROL/ TRACTION LOSS	03 AVOID COLLISION WITH VEH., PED., ANIM.	04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN
	B Left Roadside Departure	 06 DRIVE OFF ROAD	07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH., PED., ANIM.	09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN
	C Forward Impact	 11 PARKED VEH.	 12 STA. OBJECT	 13 PEDESTRIAN/ ANIMAL	 14 END DEPARTURE	15 SPECIFICS OTHER	16 SPECIFICS UNKNOWN
II Same Trafficway Same Direction	D Rear-End	 20 STOPPED 21, 22, 23	 24 SLOWER 25, 26, 27	 28 DECEL. 29, 30, 31	(EACH • 32) SPECIFICS OTHER	(EACH • 33) SPECIFICS UNKNOWN	
	E Forward Impact	 34 35 CONTROL/ TRACTION LOSS; 36 37 CONTROL/ TRACTION LOSS; 38 39 AVOID COLLISION WITH VEH.; 40 41 AVOID COLLISION WITH OBJECT			(EACH • 42) SPECIFICS OTHER	(EACH • 43) SPECIFICS UNKNOWN	
	F Sideswipe Angle	 44 45 LATERAL MOVE; 46 47			(EACH • 48) SPECIFICS OTHER	(EACH • 49) SPECIFICS UNKNOWN	
III Same Trafficway Opposite Direction	G Head-On	 50 51 LATERAL MOVE	(EACH • 52) SPECIFICS OTHER		(EACH • 53) SPECIFICS UNKNOWN		
	H Forward Impact	 54 55 CONTROL/ TRACTION LOSS; 56 57 CONTROL/ TRACTION LOSS; 58 59 AVOID COLLISION WITH VEH.; 60 61 AVOID COLLISION WITH OBJECT			(EACH • 62) SPECIFICS OTHER	(EACH • 63) SPECIFICS UNKNOWN	
	I. Sideswipe Angle	 64 65 LATERAL MOVE	(EACH • 66) SPECIFICS OTHER		(EACH • 67) SPECIFICS UNKNOWN		
IV Change Trafficway Vehicle Turning	J. Turn Across Path	 68 69 INITIAL OPPOSITE DIRECTIONS; 70 71 INITIAL SAME DIRECTIONS; 72 73			(EACH • 74) SPECIFICS OTHER	(EACH • 75) SPECIFICS UNKNOWN	
	K. Turn Into Path	76 77 78 TURN INTO SAME DIRECTION; 79 80 81 82 TURN INTO OPPOSITE DIRECTIONS			(EACH • 84) SPECIFICS OTHER	(EACH • 85) SPECIFICS UNKNOWN	
V Intersecting Paths (Vehicle Damage)	L. Straight Paths	87 88 89			(EACH • 90) SPECIFICS OTHER	(EACH • 91) SPECIFICS UNKNOWN	
VI Miscellaneous	M. Backing Etc.	 92 BACKING VEH. 93 OTHER VEH. OR OBJECT			98 Other Accident Type 99 Unknown Accident Type 00 No Impact		

OCCUPANT RELATED

16. Driver Presence in Vehicle: 1
(0) Driver not present
(1) Driver present
(9) Unknown

17. Number of Occupants This Vehicle: 01
(00-96) Code actual number of occupants for this vehicle
(97) 97 or more
(99) Unknown

18. Number of Occupant Forms Submitted: 01

VEHICLE WEIGHT ITEMS

19. Vehicle Curb Weight: 1,140
____Code weight to nearest 10 kilograms.
(045) Less than 450 kilograms
(610) 6,100 kilograms or more
(999) Unknown

02,516 lbs X .4536 = 1,141 kgs

Source: [redacted]

20. Vehicle Cargo Weight: 0,000
____Code weight to nearest 10 kilograms.
(000) Less than 5 kilograms
(450) 4,500 kilograms or more
(999) Unknown

___,___ lbs X .4536 = ___,___ kgs

RECONSTRUCTION DATA

21. Towed Trailing Unit: 0
(0) No towed unit
(1) Yes—towed trailing unit
(9) Unknown

22. Documentation of Trajectory Data for This Vehicle: 0
(0) No
(1) Yes

23. Post Collision Condition of Tree or Pole (For Highest Delta V): 0
(0) Not collision (for highest delta V) with tree or pole
(1) Not damaged
(2) Cracked/sheared
(3) Tilted <45 degrees
(4) Tilted ≥45 degrees
(5) Uprooted tree
(6) Separated pole from base
(7) Pole replaced
(8) Other (specify):

(9) Unknown

24. Rollover: 0
(0) No rollover (no overturning)

Rollover (primarily about the longitudinal axis)
(1) Rollover, 1 quarter turn only
(2) Rollover, 2 quarter turns
(3) Rollover, 3 quarter turns
(4) Rollover, 4 or more quarter turns (specify):

(5) Rollover--end-over-end (i.e., primarily about the lateral axis)
(9) Rollover (overturn), details unknown

OVERRIDE/UNDERRIDE (THIS VEHICLE)

25. Front Override/Underride (this Vehicle): 0

26. Rear Override/Underride (this Vehicle): 0

(0) No override/underride, or not an end-to-end impact

Override (see specific CDC)
(1) 1st CDC
(2) 2nd CDC
(3) Other not automated CDC (specify):

Underride (see specific CDC)
(4) 1st CDC
(5) 2nd CDC
(6) Other not automated CDC (specify):

(7) Medium/heavy truck or bus override
(9) Unknown

HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

Values: (000)-(359) Code actual value
(997) Noncollision
(998) Impact with object
(999) Unknown

27. Heading Angle For This Vehicle: 173

28. Heading Angle For Other Vehicle: 273

29. Basis for Total Delta V (highest) 1

Delta V Calculated
(1) CRASH program—damage only routine
(2) CRASH program—damage and trajectory routine
(3) Missing vehicle algorithm

Delta V Not Calculated
(4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
(5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction technique, regardless of adequacy of damage data.
(6) All vehicle and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

COMPUTER GENERATED DELTA V

	Secondary	Highest
30. Total Delta V		026
31. Longitudinal Component of Delta V	+⊖	0063
32. Lateral Component of Delta V	+⊖	026

30. 25.8 (16.1 MPH) Nearest kph
(NOTE: 000 means less than 0.5 kph)
(160) 159.5 kph and above
(999) Unknown

31. −3.1 (−2.0 MPH) Nearest kph
(NOTE: __000 means greater than −0.5 kph and less than +0.5 kph)
(±160) ±159.5 kph and above
(__999) Unknown

32. 25.6 (15.9 MPH) Nearest kph
(NOTE: __000 means greater than −0.5 kph and less than +0.5 kph)
(±160) ±159.5 kph and above
(__999) Unknown

33. Energy Absorption 048.000
48023.1 (35415.3 FT-LBS) Nearest 100 joules
(NOTE: 0000 means less than 50 joules)
(9997) 999,650 joules or more
(9999) Unknown

34. Confidence In Reconstruction Program Results (For Highest Delta V) 1
(0) No reconstruction
(1) Collision fits model — results appear reasonable
(2) Collision fits model — results appear high
(3) Collision fits model — results appear low
(4) Borderline reconstruction — results appear reasonable

35. Type of Vehicle Inspection 1
(0) No inspection
(1) Complete inspection
(2) Partial inspection (specify): _____

36. Is this an AOPS Vehicle? 0
(0) No
(1) Yes - researcher determined
(2) VIN determined air bag system
(3) VIN determined automatic (passive) belts
(4) VIN determined air bag and automatic (passive) belts

IS OLDMISS APPLICABLE FOR THIS VEHICLE? [ ] YES [X] NO

IF YES: IS A COMPLETED OLDMISS PROGRAM SUMMARY INCLUDED? [ ] YES [ ] NO

37. Police Reported Other Drug Presence Ø
    (0) No other drugs present
    (1) Yes (other drug present)
    (7) Not reported
    (8) No driver present
    (9) Unknown

38. Police Reported Drug Evaluation Classification (DEC) Test For Driver Ø
    (0) No DEC process available or given
    (1) DEC process given, results known
    (2) DEC process given, results unknown
    (3) DEC process available, unknown if given
    (8) No driver present

39. Other Drug Specimen Test Type For Driver Ø
    (0) No specimen test given
    (1) Blood test
    (2) Urine test
    (3) Other specimen tests (specify): _____
    (7) Unspecified specimen test
    (8) No driver present
    (9) Unknown if specimen test given

DRUG EVALUATION CLASSIFICATION
OTHER DRUGS TEST RESULTS FOR DRIVER

	DEC Test Results	Specimen Test Results
Narcotic Drug	40. Ø	41. Ø
Depressant Drug	42. Ø	43. Ø
Stimulant Drug	44. Ø	45. Ø
Hallucinogen Drug	46. Ø	47. Ø
Cannabinoid Drug	48. Ø	49. Ø
Phencyclidine (PCP)	50. Ø	51. Ø
Inhalant Drug	52. Ø	53. Ø
Other Drug (Excluding Nicotine, Aspirin, Alcohol, Drugs Administered Post-Crash)	54. Ø	55. Ø

Codes For DEC Test Results

(0) No DEC test given
(1) Passed DEC test
(2) Failed DEC test
(3) DEC test given—results unknown
(8) No driver present
(9) Unknown if DEC test given

Codes for Specimen Test Results

(0) No specimen test given
(1) Drug not found in specimen
(2) Drug found in specimen
(7) Specimen test given, results unknown or not obtained
(8) No driver present
(9) Unknown if specimen test given

OTHER DATA

56. Driver's Zip Code [redacted]

(00000) Driver not present
(00001) Driver not a resident of U.S. or territories
_____ Code actual 5-digit zip code
(99999) Unknown

57. Driver's Race/Ethnic Origin 1
(0) Driver not present
(1) White (non-Hispanic)
(2) Black (non-Hispanic)
(3) White (Hispanic)
(4) Black (Hispanic)
(5) American Indian, Eskimo or Aleut
(6) Asian or Pacific Islander
(8) Other (specify):
_____
(9) Unknown

58. Vehicle Special Use (This Trip) Ø
(0) No special use
(1) Taxi
(2) Vehicle used as school bus
(3) Vehicle used as other bus
(4) Military
(5) Police
(6) Ambulance
(7) Fire truck or car
(8) Other (specify): _____
(9) Unknown

ROLLOVER DATA

If GV07 (Body Type) ≠ 1-49, leave GV59-GV63 blank.
If GV24 (Rollover) = 0, then GV59-GV63 must equal 0.
If GV24 = 9, then GV59-GV63 must equal 9.

59. Rollover Initiation Type Ø
(0) No rollover
(1) Trip-over
(2) Flip-over
(3) Turn-over
(4) Climb-over
(5) Fall-over
(6) Bounce-over
(7) Collision with another vehicle
(8) Other rollover initiation type specify):
_____
(9) Unknown rollover initiation type

60. Location of Rollover Initiation Ø
(0) No rollover
(1) On roadway
(2) On shoulder—paved
(3) On shoulder—unpaved
(4) On roadside or divided trafficway median
(9) Unknown

61. Rollover Initiation Object Contacted Ø Ø

62. Location on Vehicle Where Initial Principal Tripping Force Is Applied Ø
(0) No rollover
(1) Wheels/tires
(2) Side plane
(3) End plane
(4) Undercarriage
(5) Other location on vehicle (specify):
_____
(8) Non-contact rollover forces (specify):
_____
(9) Unknown

63. Direction of Initial Roll Ø
(0) No rollover
(1) Roll right - primarily about the longitudinal axis
(2) Roll left - primarily about the longitudinal axis
(5) End-over-end (i.e., primarily about the lateral axis)
(9) Unknown roll direction

PRECRASH DATA

64. Pre-Event Movement (Prior to Recognition of Critical Event) Ø 1
(01) Going straight
(02) Slowing or stopping in traffic lane
(03) Starting in traffic lane
(04) Stopped in traffic lane
(05) Passing or overtaking another vehicle
(06) Disabled or parked in travel lane
(07) Leaving a parking position
(08) Entering a parking position
(09) Turning right
(10) Turning left
(11) Making a U-turn
(12) Backing up (other than for parking position)
(13) Negotiating a curve
(14) Changing lanes
(15) Merging
(16) Successful avoidance maneuver to a previous critical event
(97) Other (specify):
_____
(98) No driver present
(99) Unknown

BEST AVAILABLE COPY

CODES FOR ROLLOVER INITIATION OBJECT CONTACTED

(00) No rollover
(01-30) — Vehicle Number

Noncollision
(31) Turn-over — fall-over
(33) Jackknife

Collision With Fixed Object
(41) Tree (≤ 10 cm in diameter)
(42) Tree (> 10 cm in diameter)
(43) Shrubbery or bush
(44) Embankment

(45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post
(50) Pole or post (≤ 10 cm in diameter)
(51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
(52) Pole or post (> 30 cm in diameter)
(53) Pole or post (diameter unknown)

(54) Concrete traffic barrier
(55) Impact attenuator
(56) Other traffic barrier (includes guardrail) (specify):_____

(57) Fence
(58) Wall
(59) Building
(60) Ditch or culvert
(61) Ground
(62) Fire hydrant
(63) Curb
(64) Bridge
(68) Other fixed object (specify):

_____
(69) Unknown fixed object

Collision with Nonfixed Object
(71) Motor vehicle not in-transport
(76) Animal
(77) Train
(78) Trailer, disconnected in transport
(88) Other nonfixed object (specify):

_____
(89) Unknown nonfixed object

(98) Other event (specify):

_____
(99) Unknown event or object

PRECRASH DATA (Continued)

65. Critical Precrash Event 06

This Vehicle Loss of Control Due To:
(01) Blow out or flat tire
(02) Stalled engine
(03) Disabling vehicle failure (e.g., wheel fell off) (specify): _____
(04) Non-disabling vehicle problem (e.g., hood flew up) (specify): _____
(05) Poor road conditions (puddle, pot hole, ice, etc.) (specify): _____
(06) Traveling too fast for conditions
(08) Other cause of control loss (specify): _____
(09) Unknown cause of control loss

This Vehicle Traveling
(10) Over the lane line on left side of travel lane
(11) Over the lane line on right side of travel lane
(12) Off the edge of the road on the left side
(13) Off the edge of the road on the right side
(14) End departure
(15) Turning left at intersection
(16) Turning right at intersection
(17) Crossing over (passing through) intersection
(19) Unknown travel direction

Other Motor Vehicle In Lane
(50) Stopped
(51) Traveling in same direction with lower speed (i.e., lower steady speed or decelerating)
(52) Traveling in same direction with higher speed
(53) Traveling in opposite direction
(54) In crossover
(55) Backing
(59) Unknown travel direction of other motor vehicle in lane

Other Motor Vehicle Encroaching Into Lane
(60) From adjacent lane (same direction)—over left lane line
(61) From adjacent lane (same direction)—over right lane line
(62) From opposite direction—over left lane line
(63) From opposite direction—over right lane line
(64) From parking lane
(65) From crossing street, turning into same direction
(66) From crossing street, across path
(67) From crossing street, turning into opposite direction
(68) From crossing street, intended path not known
(70) From driveway, turning into same direction
(71) From driveway, across path
(72) From driveway, turning into opposite direction
(73) From driveway, intended path not known
(74) From entrance to limited access highway
(78) Encroachment by other vehicle—details unknown

Pedestrian or Pedalcyclist, or Other Nonmotorist
(80) Pedestrian in roadway
(81) Pedestrian approaching roadway
(82) Pedestrian - unknown location
(83) Pedalcyclist or other nonmotorist in roadway (specify): _____
(84) Pedalcyclist or other nonmotorist approaching roadway (specify): _____
(85) Pedalcyclist or other nonmotorist—unknown location (specify): _____

Object or Animal
(87) Animal in roadway
(88) Animal approaching roadway
(89) Animal—unknown location
(90) Object in roadway
(91) Object approaching roadway
(92) Object—unknown location

(98) Other critical precrash event (specify): _____
(99) Unknown

For Corrective Actions Attempted see variable GV14 (Attemped Avoidance Manuever)

66. Precrash Stability After Avoidance Maneuver 9
(0) No avoidance maneuver
(1) Tracking
(2) Skidding longitudinally—rotation less than 30 degrees
(3) Skidding laterally—clockwise rotation
(4) Skidding laterally—counterclockwise rotation
(7) Other vehicle loss-of-control (specify): _____
(8) No driver present
(9) Precrash stability unknown

67. Precrash Directional Consequences of Avoidance Maneuver (Corrective Action) 9
(0) No avoidance maneuver
(1) Vehicle stayed in travel lane where avoidance maneuver was initiated
(2) Vehicle stayed on roadway but left travel lane where avoidance maneuver was initiated
(3) Vehicle stayed on roadway, not known if left travel lane where avoidance maneuver was initiated
(4) Vehicle departed roadway
(5) Avoidance maneuver initiated off roadway
(8) No driver present
(9) Directional consequences unknown

***** IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35 = 0), *****
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS.

***** IF GV07 DOES NOT EQUAL 01-49, DO NOT COMPLETE *****
THE EXTERIOR VEHICLE, INTERIOR VEHICLE,
OCCUPANT ASSESSMENT, AND OCCUPANT INJURY FORMS.

U.S. Department of Transportation
National Highway Traffic Safety Administration

EXTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ____
2. Case Number - Stratum DSI-93-AB-0007
3. Vehicle Number 02

VEHICLE IDENTIFICATION

VIN F 9 R 0 3 Y * * * * * * * * * * * Model Year 79

Vehicle Make (specify): FORD Vehicle Model (specify): MUSTANG II 3-DOOR

LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L
01	BEGINS 35.6cm(14") FORWARD OF L/R AXLE	BEGINS 61cm(24") FORWARD OF L/R AXLE

CRUSH PROFILE IN CENTIMETERS

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure and document on the vehicle diagram the location of maximum crush.

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

Specific Impact Number	Plane of Impact C-Measurements	Direct Damage		Field L	C_1	C_2	C_3	C_4	C_5	C_6	±D
		Width (CDC)	Max Crush								
01	LEFT SIDE AT MAX. EXTENSION	81	44 @C4	152	19	33	41	44	24	0	-133
				U.S. EQUIVALENTS							
01	LEFT SIDE AT MAX. EXTENSION	32.0in	17.4in @C4	60.0in	7.4in	12.8in	16.2in	17.4in	9.5in	0	-52.2in

HS Form 436A (Rev. 1/93)

ORIGINAL SPECIFICATIONS WORK SHEET

Wheelbase	106.4	inches	x 2.54	=	255	cm
Overall Length	179.1	inches	x 2.54	=	455	cm
Maximum Width	069.1	inches	x 2.54	=	176	cm
Curb Weight	02,516	pounds	x .4536	=	1,141	kg
Average Track	056.8	inches	x 2.54	=	144	cm
Front Overhang	039.4	inches	x 2.54	=	100	cm
Rear Overhang	039.3	inches	x 2.54	=	100	cm
Undeformed End Width	060.0	inches	x 2.54	=	152	cm
Engine Size: cyl./displ.	2300	cc	x .001	=	2.3	L
	140	CID	x .0164	=	2.3	L

VEHICLE DAMAGE SKETCH

TIRE–WHEEL DAMAGE

a. Rotation physically restricted		b. Tire deflated	
RF	2	RF	2
LF	2	LF	2
RR	2	RR	1
LR	SHEARED	LR	8

(1) Yes (2) No (8) NA (9) Unk.

TYPE OF TRANSMISSION

☒ Manual ☐ Automatic

ORIGINAL SPECIFICATIONS

Wheelbase	255	cm
Overall Length	455	cm
Maximum Width	176	cm
Curb Weight	1,141	kg
Average Track	144	cm
Front Overhang	100	cm
Rear Overhang	100	cm
Undeformed End Width	152	cm
Engine Size: cyl./displ.	L4/2.3	L

WHEEL STEER ANGLES

(For locked front wheels or displaced rear axles only)

RF ± — °
LF ± — °
RR ± — °
LR ± — °

Within ± 5 degrees

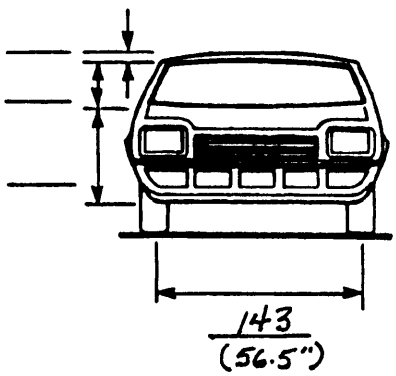
DRIVE WHEELS

☐ FWD ☒ RWD ☐ 4WD

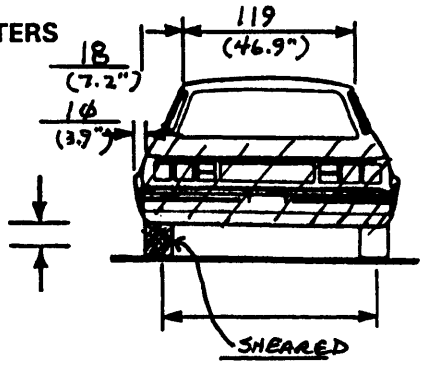
Approximate Cargo Weight 0 kg

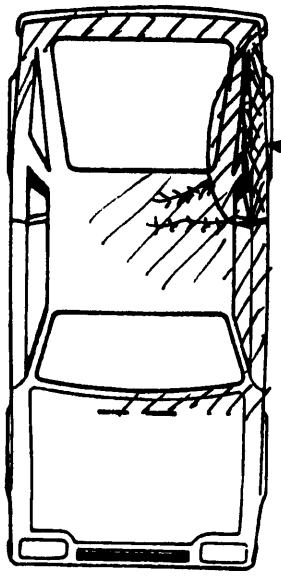
STRING LINE AOW

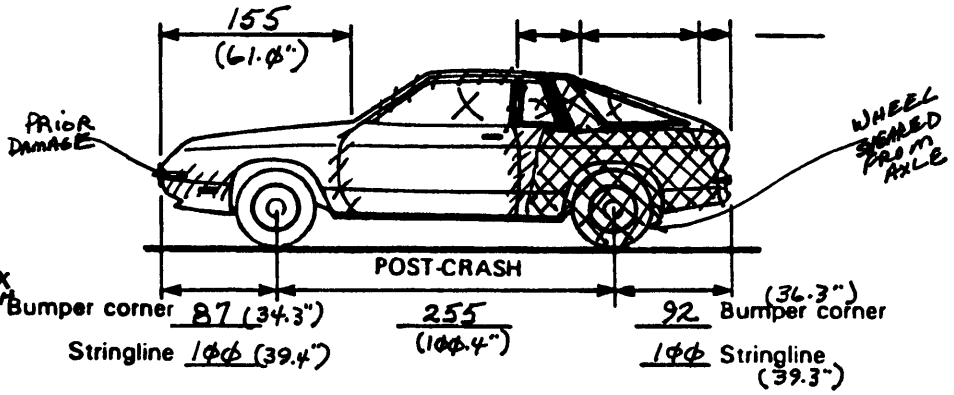
MEASUREMENTS IN CENTIMETERS

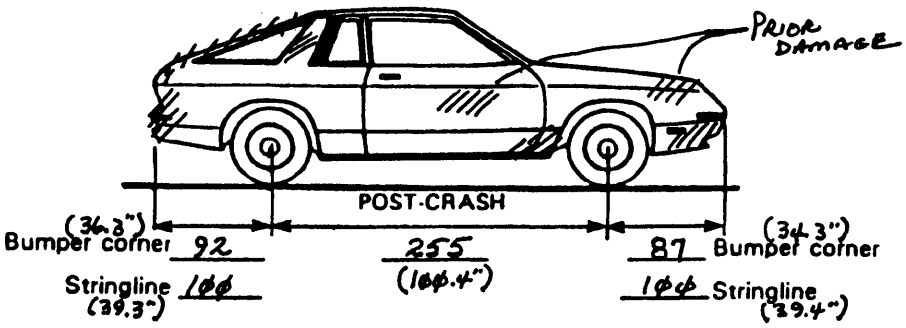


Original Bumper height









NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewalls, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page.

Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

CDC WORKSHEET

CODES FOR OBJECT CONTACTED

(01-30) — Vehicle Number

Noncollision
- (31) Overturn — rollover
- (32) Fire or explosion
- (33) Jackknife
- (34) Other intraunit damage (specify): _____
- (35) Noncollision injury
- (38) Other noncollision (specify): _____
- (39) Noncollision — details unknown

Collision With Fixed Object
- (41) Tree (≤ 10 cm in diameter)
- (42) Tree (> 10 cm in diameter)
- (43) Shrubbery or bush
- (44) Embankment
- (45) Breakaway pole or post (any diameter)

Nonbreakaway Pole or Post
- (50) Pole or post (≤ 10 cm in diameter)
- (51) Pole or post (> 10 cm but ≤ 30 cm in diameter)
- (52) Pole or post (> 30 cm in diameter)
- (53) Pole or post (diameter unknown)
- (54) Concrete traffic barrier
- (55) Impact attenuator
- (56) Other traffic barrier (includes guardrail) (specify): _____
- (57) Fence
- (58) Wall
- (59) Building
- (60) Ditch or culvert
- (61) Ground
- (62) Fire hydrant
- (63) Curb
- (64) Bridge
- (68) Other fixed object (specify): _____
- (69) Unknown fixed object

Collision with Nonfixed Object
- (71) Motor vehicle not in-transport
- (72) Pedestrian
- (73) Cyclist or cycle
- (74) Other nonmotorist or conveyance
- (75) Vehicle occupant
- (76) Animal
- (77) Train
- (78) Trailer, disconnected in transport
- (88) Other nonfixed object (specify): _____
- (89) Unknown nonfixed object
- (98) Other event (specify): _____
- (99) Unknown event or object

DEFORMATION CLASSIFICATION BY EVENT NUMBER

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force (degrees)	Incremental Value of Shift	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
01	01	263	00	L	Z	E	W	03

COLLISION DEFORMATION CLASSIFICATION

HIGHEST DELTA "V"

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Longitudinal or Lateral Location	(5) Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. 01	5. 01	6. 09	7. L	8. Z	9. E	10. W	11. 03

Second Highest Delta "V"

12. ___	13. ___	14. ___	15. ___	16. ___	17. ___	18. ___	19. ___

CRUSH PROFILE IN CENTIMETERS

The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. (ALL MEASUREMENTS ARE IN CENTIMETERS.)

HIGHEST DELTA "V"

20. L	21. C_1	C_2	C_3	C_4	C_5	C_6	22. ±D
152 (60")	019 (07")	033 (13")	041 (16")	044 (17")	024 (10")	000	+ 133 (-52")

Second Highest Delta "V"

23. L	24. C_1	C_2	C_3	C_4	C_5	C_6	25. ±D
___	___	___	___	___	___	___	+ - ___

26. Are CDCs Documented but Not Coded on The Automated File? 0
(0) No
(1) Yes

27. Researcher's Assessment of Vehicle Disposition 1
(0) Not towed due to vehicle damage
(1) Towed due to vehicle damage
(9) Unknown

28. Original Wheelbase 255
___Code to the nearest centimeter
(999) Unknown

100.4 inches X 2.54 = 255 centimeters

29. Is This A Multi-Stage Manufactured Vehicle And/Or A Certified Altered Vehicle? ϕ
(0) No post manufacturer modifications
(1) Yes - post manufacturer modifications (specify): _____
_____
_____
(Include photograph of CERTIFICATION PLACARD in case report)
(9) Unknown if vehicle is modified

30. Fire Occurrence ϕ
(0) No fire

Yes, fire occurred
(1) Minor
(2) Major
(9) Unknown

31. Origin of Fire ϕ
(0) No fire
(1) Vehicle exterior (front, side, back, top)
(2) Exhaust system
(3) Fuel tank (and other fuel retention system parts)
(4) Engine compartment
(5) Cargo/trunk compartment
(6) Instrument panel
(7) Passenger compartment area
(8) Other location (specify): _____
(9) Unknown

32. Type of Fuel Tank 1
(0) No fuel tank (electrical vehicle)
(1) Metallic
(2) Non-metallic
(9) Unknown

*** STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED AND WAS NOT AN AOPS *** (I.E., GV09=0 OR 9 AND GV36=0), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.

U.S. Department of Transportation
National Highway Traffic Safety Administration

INTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ____
2. Case Number - Stratum DSI-93-AB-0007
3. Vehicle Number 02

INTEGRITY

4. Passenger Compartment Integrity 06
(00) No integrity loss

Yes, Integrity Was Lost Through
(01) Windshield
(02) Door (side)
(03) Door/hatch (back door)
(04) Roof
(05) Roof glass
(06) Side window
(07) Rear window (backlight)
(08) Roof and roof glass
(09) Windshield and door (side)
(10) Windshield and roof
(11) Side and rear window (side window and backlight)
(12) Windshield and side window
(13) Door and side window
(98) Other combination of above (specify): _____
(99) Unknown

Door, Tailgate or Hatch Opening

5. LF 3 6. RF 1 7. LR 0 8. RR 0 9. TG/H 3

(0) No door/gate/hatch
(1) Door/gate/hatch remained closed and operational
(2) Door/gate/hatch came open during collision
(3) Door/gate/hatch jammed shut
(8) Other (specify): _____
(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 ≠ 2, Then code 0

10. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate or Hatch Came Open During Collision
(1) Door operational (no damage)
(2) Latch/striker failure due to damage
(3) Hinge failure due to damage
(4) Door structure failure due to damage
(5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage
(6) Latch/striker and hinge failure due to damage
(8) Other failure (specify): _____
(9) Unknown

GLAZING

Glazing Damage from Impact Forces

15. WS 0 16. LF 6 17. RF 0 18. LR 6 19. RR 0
20. BL 0 21. Roof 8 22. Other 8

(0) No glazing damage from impact forces
(2) Glazing in place and cracked from impact forces
(3) Glazing in place and holed from impact forces
(4) Glazing out-of-place (cracked or not) and not holed from impact forces
(5) Glazing out-of-place and holed from impact forces
(6) Glazing disintegrated from impact forces
(7) Glazing removed prior to accident
(8) No glazing
(9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 0 24. LF 9 25. RF 0 26. LR 0 27. RR 0
28. BL 0 29. Roof 0 30. Other 0

(0) No occupant contact to glazing or no glazing
(1) Glazing contacted by occupant but no glazing damage
(2) Glazing in place and cracked by occupant contact
(3) Glazing in place and holed by occupant contact
(4) Glazing out-of-place (cracked or not) by occupant contact and not holed by occupant contact
(5) Glazing out-of-place by occupant contact and holed by occupant contact
(6) Glazing disintegrated by occupant contact
(9) Unknown if contacted by occupant

If No Glazing Damage *And* No Occupant Contact or No Glazing, Then Code IV31 Through IV46 As 0

Type of Window/Windshield Glazing

31. WS 0 32. LF 2 33. RF 0 34. LR 2 35. RR 0
36. BL 0 37. Roof 0 38. Other 0

(0) No glazing contact and no damage, or no glazing
(1) AS-1 — Laminated
(2) AS-2 — Tempered
(3) AS-3 — Tempered-tinted
(4) AS-14 — Glass/Plastic
(8) Other (specify): _____
(9) Unknown

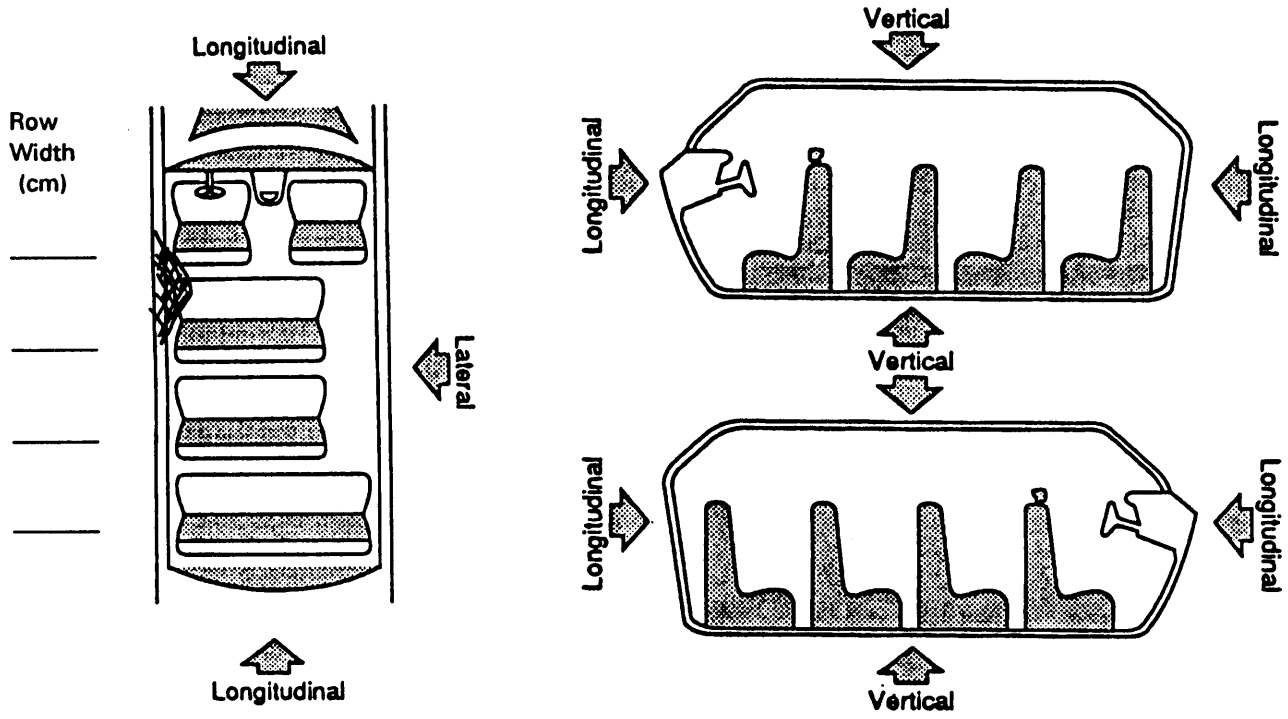
Window Precrash Glazing Status

39. WS 0 40. LF 2 41. RF 0 42. LR 1 43. RR 0
44. BL 0 45. Roof 0 46. Other 0

(0) No glazing contact and no damage, or no glazing
(1) Fixed
(2) Closed
(3) Partially opened
(4) Fully opened
(9) Unknown

INTRUSION WORKSHEET

Note: Sketch intruded areas



LOCATION OF INTRUSION	INTRUDED COMPONENT	(All Measurements Are In Centimeters) COMPARISON VALUE	—	INTRUDED VALUE	=	INTRUSION	DOMINANT CRUSH DIRECTION
21	L. "C" PILLAR	70 (27.5")	—	38 (15.0")	=	32 (12.5")	LATERAL
21	L/R SIDE PANEL	52 (20.5")	—	33 (13.0")	=	19 (7.5")	LATERAL
21	L. "B" PILLAR	69 (27.0")	—	56 (22.0")	=	13 (5.0")	LATERAL
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		
			—		=		

Document no more than the 15 most severe intrusions

OCCUPANT AREA INTRUSION

Note: If no intrusions, leave variables IV47-IV86 blank.

	Location of Intrusion	Intruding Component	Magnitude of Intrusion	Dominant Crush Direction
1st	47. 2 1	48. ϕ 8	49. 4	50. 3
2nd	51. 2 1	52. 2 8	53. 3	54. 3
3rd	55. 2 1	56. ϕ 7	57. 2	58. 3
4th	59. ___	60. ___	61. ___	62. ___
5th	63. ___	64. ___	65. ___	66. ___
6th	67. ___	68. ___	69. ___	70. ___
7th	71. ___	72. ___	73. ___	74. ___
8th	75. ___	76. ___	77. ___	78. ___
9th	79. ___	80. ___	81. ___	82. ___
10th	83. ___	84. ___	85. ___	86. ___

LOCATION OF INTRUSION

Front Seat
- (11) Left
- (12) Middle
- (13) Right

Second Seat
- (21) Left
- (22) Middle
- (23) Right

Third Seat
- (31) Left
- (32) Middle
- (33) Right

Fourth Seat
- (41) Left
- (42) Middle
- (43) Right

- (97) Catastrophic
- (98) Other enclosed area (specify) _____
- (99) Unknown

INTRUDING COMPONENT

Interior Components
- (01) Steering assembly
- (02) Instrument panel left
- (03) Instrument panel center
- (04) Instrument panel right
- (05) Toe pan
- (06) A (A1/A2)-pillar
- (07) B-pillar
- (08) C-pillar
- (09) D-pillar
- (10) Door panel (side)
- (12) Roof (or convertible top)
- (13) Roof side rail
- (14) Windshield
- (15) Windshield header
- (16) Window frame
- (17) Floor pan (includes sill)
- (18) Backlight header
- (19) Front seat back
- (20) Second seat back
- (21) Third seat back
- (22) Fourth seat back
- (23) Fifth seat back
- (24) Seat cushion
- (25) Back door/panel (e.g., tailgate)
- (26) Other interior component (specify): _____
- (27) Side panel - forward of the A (A2)-pillar
- (28) Side panel - rear of the A (A2)-pillar

Exterior Components
- (30) Hood
- (31) Outside surface of this vehicle (specify): _____
- (32) Other exterior object in the environment (specify): _____
- (33) Unknown exterior object
- (97) Catastrophic
- (98) Intrusion of unlisted component(s) (specify): _____
- (99) Unknown

MAGNITUDE OF INTRUSION

- (1) ≥ 3 centimeters but < 8 centimeters
- (2) ≥ 8 centimeters but < 15 centimeters
- (3) ≥ 15 centimeters but < 30 centimeters
- (4) ≥ 30 centimeters but < 46 centimeters
- (5) ≥ 46 centimeters but < 61 centimeters
- (6) ≥ 61 centimeters
- (7) Catastrophic
- (9) Unknown

DOMINANT CRUSH DIRECTION

- (1) Vertical
- (2) Longitudinal
- (3) Lateral
- (7) Catastrophic
- (9) Unknown

STEERING RIM/SPOKE DEFORMATION

(All Measurements Are in Centimeters)

COMPARISON VALUE	—	DAMAGE VALUE	=	DEFORMATION
	—		=	
	—		=	
	—		=	
	—		=	

STEERING COLUMN

87. Steering Column Type — 1
(1) Fixed column
(2) Tilt column
(3) Telescoping column
(4) Tilt and telescoping column
(8) Other column type (specify): _____
(9) Unknown

88. Blank — X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

89. Blank — X X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

90. Blank — X X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

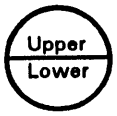
91. Blank — X X X
(This variable is left blank so that numbering consistency can be maintained with the 1988-93 CDS.

92. Steering Rim/Spoke Deformation — Ø Ø
_____Code actual measured deformation to the nearest centimeter
(00) No steering rim deformation
(01-14) Actual measured value in centimeters
(15) 15 centimeters or more
(98) Observed deformation cannot be measured
(99) Unknown

93. Location of Steering Rim/Spoke Deformation — Ø Ø
(00) No steering rim deformation

Quarter Sections
(01) Section A
(02) Section B
(03) Section C
(04) Section D

Half Sections
(05) Upper half of rim/spoke
(06) Lower half of rim/spoke
(07) Left half of rim/spoke
(08) Right half of rim/spoke



(09) Complete steering wheel collapse
(10) Undetermined location
(99) Unknown

INSTRUMENT PANEL

94. Odometer Reading — 1 8 Ø,000
_____kilometers—Code to the nearest 1,000 kilometers
(000) No odometer
(001) Less than 1,500 kilometers
(500) 499,500 kilometers or more
(999) Unknown

111,714 miles X 1.6093 = 179,748 kilometers

Source: INSPECTION

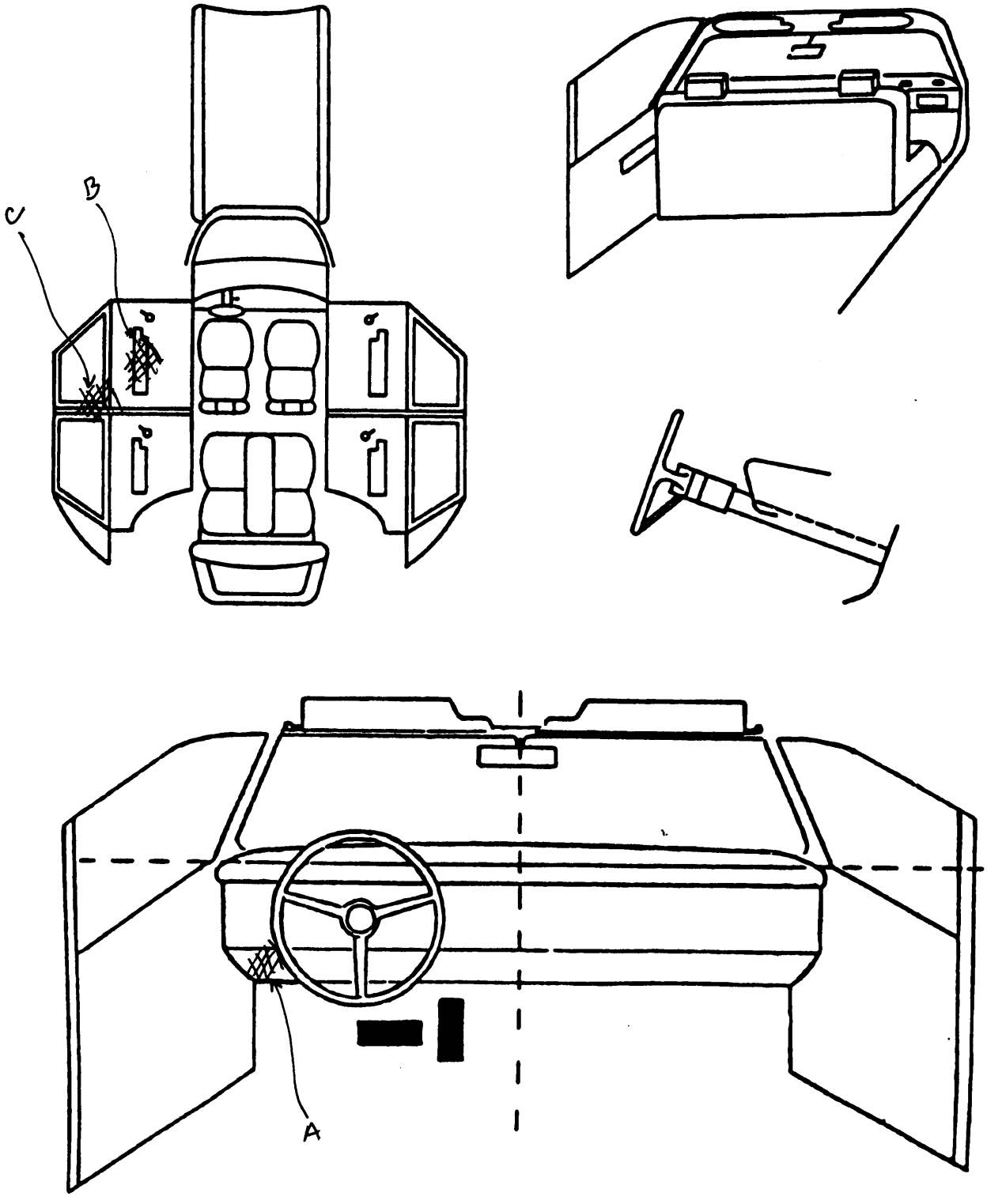
95. Instrument Panel Damage from Occupant Contact? — 1
(0) No
(1) Yes
(9) Unknown

96. Knee Bolsters Deformed from Occupant Contact? — 8
(0) No
(1) Yes
(8) Not present
(9) Unknown

97. Did Glove Compartment Door Open During Collision(s)? — Ø
(0) No
(1) Yes
(8) Not present
(9) Unknown

VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment



Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure.
Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.
Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A	09	01	L. KNEE	DEFORMATION	2
B	21	01	L. TORSO	DEFORMATION / BODY OIL	2
C	23	01	HEAD	DEFORMATION / BODY OIL / HAIR	1
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

CODES FOR INTERIOR COMPONENTS

FRONT
- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A (A1/A2)-pillar, instrument panel, or mirror (passenger side only)
- (16) Driver side air bag compartment cover
- (17) Passenger side air bag compartment cover
- (18) Windshield reinforced by exterior object (specify):_____
- (19) Other front object (specify):

LEFT SIDE
- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A (A1/A2)-pillar
- (23) Left B-pillar
- (24) Other left pillar (specify):
- (25) Left side window glass or frame
- (26) Left side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B-pillar, or roof side rail.
- (27) Other left side object (specify):
- (28) Left side window sill

RIGHT SIDE
- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A (A1/A2)-pillar
- (33) Right B-pillar
- (34) Other right pillar (specify):
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A (A1/A2)-pillar, B pillar, or roof side rail.
- (37) Other right side object (specify):
- (38) Right side window sill

INTERIOR
- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify):_____
- (44) Head restraint system
- (45) Air bag (use codes "16" and "17" for injuries sustained from air bag compartment covers)
- (46) Other occupants (specify):
- (47) Interior loose objects
- (48) Child safety seat (specify):
- (49) Other interior object (specify):

ROOF
- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

FLOOR
- (56) Floor (including toe pan)
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

REAR
- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify):

CONFIDENCE LEVEL OF CONTACT POINT
- (1) Certain
- (2) Probable
- (3) Possible
- (9) Unknown

AUTOMATIC RESTRAINTS

NOTES: Encode the data for each applicable front seat position. The attribute for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

AIR BAGS

		Left	Right
FIRST	Availability/Function	ϕ	ϕ
	Deployment	ϕ	ϕ
	Failure	ϕ	ϕ

Air Bag System Availability/Function
- (0) Not equipped/not available
- (1) Air bag

Non-functional
- (2) Air bag disconnected (specify): _____
- (3) Air bag not reinstalled
- (9) Unknown

Air Bag System Deployment
- (0) Not equipped/not available
- (1) Air bag deployed during accident (as a result of impact)
- (2) Air bag deployed inadvertently just prior to accident
- (3) Air bag deployed, accident sequence undetermined
- (4) Nondeployed
- (5) Unknown if deployed
- (6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
- (9) Unknown

Did Air Bag System Fail?
- (0) Not equipped/not available
- (1) No
- (2) Yes (specify): _____
- (9) Unknown

AUTOMATIC BELTS

		Left	Right
FIRST	Availability/Function	ϕ	ϕ
	Use	ϕ	ϕ
	Type	ϕ	ϕ
	Proper Use	ϕ	ϕ
	Failure Modes	ϕ	ϕ

Automatic (Passive) Belt System Availability/Function
- (0) Not equipped/not available
- (1) 2 point automatic belts
- (2) 3 point automatic belts
- (3) Automatic belts - type unknown

Non-functional
- (4) Automatic belts destroyed or rendered inoperative
- (9) Unknown

Automatic (Passive) Belt System Use
- (0) Not equipped/not available/destroyed or rendered inoperative
- (1) Automatic belt in use
- (2) Automatic belt not in use (manually disconnected, motorized track inoperative)
- (3) Automatic belt use unknown
- (9) Unknown

Automatic (Passive) Belt System Type
- (0) Not equipped/not available
- (1) Non-motorized system
- (2) Motorized system
- (9) Unknown

Proper Use of Automatic (Passive) Belt System
- (0) Not equipped/not available/not used
- (1) Automatic belt used properly
- (2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly
- (3) Automatic shoulder belt worn under arm
- (4) Automatic shoulder belt worn behind back
- (5) Automatic belt worn around more than one person
- (6) Lap portion of automatic belt worn on abdomen
- (7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify): _____
- (8) Other improper use of automatic belt system (specify): _____
- (9) Unknown

Automatic (Passive) Belt Failure Modes During Accident
- (0) Not equipped/not available/not in use
- (1) No automatic belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify): _____
- (6) Broken retractor
- (7) Combination of above (specify):
- (8) Other automatic belt failure (specify): _____
- (9) Unknown

MANUAL RESTRAINTS

NOTES: Encode the applicable data **for each seat position** in the vehicle. The attribute for the variable may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Ocupant Assessment Form.

If a Child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
FIRST	Availability	4	ϕ	4
	Use	ϕϕ	ϕϕ	ϕϕ
	Failure Modes	ϕ	ϕ	ϕ
SECOND	Availability	3	3	3
	Use	ϕϕ	ϕϕ	ϕϕ
	Failure Modes	ϕ	ϕ	ϕ
THIRD	Availability			
	Use			
	Failure Modes			
OTHER	Availability			
	Use			
	Failure Modes			

Manual (Active) Belt System Availability

(0) None available
(1) Belt removed/destroyed
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt available - type unknown

Integral Belt Partially Destroyed

(6) Shoulder belt (lap belt destroyed/removed)
(7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____
(9) Unknown

Manual (Active) Belt System Use

(00) None used, not available, or belt removed/destroyed
(01) Inoperable (specify): _____
(02) Shoulder belt
(03) Lap belt
(04) Lap and shoulder belt
(05) Belt used - type unknown
(08) Other belt used (specify): _____
(12) Shoulder belt used with child safety seat
(13) Lap belt used with child safety seat
(14) Lap and shoulder belt used with child safety seat
(15) Belt used with child safety seat - type unknown
(18) Other belt used with child safety seat (specify): _____
(99) Unknown if belt used

Manual (Active) Belt Failure Modes During Accident

(0) No manual belt used or not available
(1) No manual belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): _____
(6) Broken retractor
(7) Combination of above (specify): _____
(8) Other manual belt failure (specify): _____
(9) Unknown

CHILD SAFETY SEAT FIELD ASSESSMENT

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Uasge						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

1. Type of Child Safety Seat

   (0) No child safety seat
   (1) Infant seat
   (2) Toddler seat
   (3) Convertible seat
   (4) Booster seat
   (7) Other type child safety seat (specify):

   _____

   (8) Unknown child safety seat type
   (9) Unknown if child safety seat used

2. Child Safety Seat Orientation

   (00) No child safety seat

   Designed for Rear Facing for This Age/Weight
   (01) Rear facing
   (02) Forward facing
   (08) Other orientation (specify):

   _____

   (09) Unknown orientation

   Designed for Forward Facing for This Age/Weight
   (11) Rear facing
   (12) Forward facing
   (18) Other orientation (specify):

   _____

   (19) Unknown orientation

   Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
   (21) Rear facing
   (22) Forward facing
   (28) Other orientation (specify):

   _____

   (29) Unknown orientation

   (99) Unknown if child safety seat used

3. Child Safety Seat Harness Usage

4. Child Safety Seat Shield Usage

5. Child Safety Seat Tether Usage
   Note: Options Below Are Used for Variables 3-5.

   (00) No child safety seat

   Not Designed with Harness/Shield/Tether
   (01) After market harness/shield/tether added, not used
   (02) After market harness/shield/tether used
   (03) Child safety seat used, but no after market harness/shield/tether added
   (09) Unknown if harness/shield/tether added or used

   Designed With Harness/Shield/Tether
   (11) Harness/shield/tether not used
   (12) Harness/shield/tether used
   (19) Unknown if harness/shield/tether used

   Unknown If Designed With Harness/Shield/Tether
   (21) Harness/shield/tether not used
   (22) Harness/shield/tether used
   (29) Unknown if harness/shield/tether used

   (99) Unknown if child safety seat used

6. Child Safety Seat Make/Model
   (Specify make/model and occupant number)

   _____

   _____

   _____

   _____

HEAD RESTRAINTS/SEAT EVALUATION

NOTES: Encode the applicable data for **each seat position** in the vehicle. The attribute for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
FIRST	Head Restraint Type/Damage	3	0	3
	Seat Type	02	00	02
	Seat Performance	5	0	1
	Seat Orientation	1	0	1
SECOND	Head Restraint Type/Damage	0	0	0
	Seat Type	05	05	05
	Seat Performance	1	1	1
	Seat Orientation	1	1	1
THIRD	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			
OTHER	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
	Seat Orientation			

Head Restraint Type/Damage by Occupant at This Occupant Position

(0) No head restraints
(1) Integral — no damage
(2) Integral — damaged during accident
(3) Adjustable — no damage
(4) Adjustable — damaged during accident
(5) Add-on — no damage
(6) Add-on — damaged during accident
(8) Other Specify): _____
(9) Unknown

Seat Type (this Occupant Position)

(00) Occupant not seated or no seat
(01) Bucket
(02) Bucket with folding back
(03) Bench
(04) Bench with separate back cushions
(05) Bench with folding back(s)
(06) Split bench with separate back cushions
(07) Split bench with folding back(s)
(08) Pedestal (i.e., column supported)
(09) Other seat type (specify): _____
(10) Box mounted seat (i.e., van type)
(99) Unknown

Seat Performance (this Occupant Position)

(0) Occupant not seated or no seat
(1) No seat performance failure(s)
(2) Seat adjusters failed
(3) Seat back folding locks or "seat back" failed specify: _____
(4) Seat tracks/anchors failed
(5) Deformed by impact of occupant
(6) Deformed by passenger compartment intrusion (specify): _____
(7) Combination of above (specify): _____
(8) Other (specify): _____
(9) Unknown

Seat Orientation (this Occupant Position)

(0) Occupant not seated or no seat
(1) Forward facing seat
(2) Rear facing seat
(3) Side facing seat (inward)
(4) Side facing seat (outward)
(8) Other (specify): _____
(9) Unknown

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E., UNUSUAL OCCUPANT CONTACT PATTERN)

EJECTION/ENTRAPMENT DATA

Complete the following if the researcher has any indication that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occpant Assessment Form.

EJECTION No [X] Yes [ ]

Describe indications of ejection and body parts involved in partial ejection(s):

Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

Ejection
(1) Complete ejection
(2) Partial ejection
(3) Ejection, Unknown degree
(9) Unknown

Ejection Area
(1) Windshield
(2) Left front
(3) Right front
(4) Left rear
(5) Right rear
(6) Rear
(7) Roof
(8) Other area (e.g., back of pickup, etc.) (specify): _____
(9) Unknown

Ejection Medium
(1) Door/hatch/tailgate
(2) Nonfixed roof structure
(3) Fixed glazing
(4) Nonfixed glazing (specify): _____
(5) Integral structure
(8) Other medium (specify): _____
(9) Unknown

Medium Status (Immediately Prior to Impact)
(1) Open
(2) Closed
(3) Integral structure
(9) Unknown

ENTRAPMENT No [X] Yes [ ]

Describe entrapment mechanism: _____

Component(s): _____

(Note in vehicle interior diagram)

U.S. Department of Transportation
National Highway Traffic Safety Administration

OCCUPANT ASSESSMENT FORM

Form Approved
O.M.B. No. 2127-0021

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number ____
2. Case Number - Stratum DSI-93-AB-0007
3. Vehicle Number 02
4. Occupant Number 01

OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 21
   Code actual age at time of accident.
   (00) Less than one year old (specify by month): _____
   (97) 97 years and older
   (99) Unknown

6. Occupant's Sex 1
   (1) Male
   (2) Female
   (9) Unknown

7. Occupant's Height 999
   Code actual height to the nearest centimeter.
   (999) Unknown
   ___ ___ inches X 2.54 = ___ ___ ___ centimeters

8. Occupant's Weight 999
   Code actual weight to the nearest kilogram.
   (999)Unknown
   ___ ___ ___ pounds X .4536 = ___ ___ ___ kilograms

9. Occupant's Role 1
   (1) Driver
   (2) Passenger
   (9) Unknown

OCCUPANT'S SEATING

10. Occupant's Seat Position 11
    Front Seat
    (11) Left side
    (12) Middle
    (13) Right side
    (14) Other (specify): _____
    (15) On or in the lap of another occupant

    Second Seat
    (21) Left side
    (22) Middle
    (23) Right side
    (24) Other (specify): _____
    (25) On or in the lap of another occupant

    Third Seat
    (31) Left side
    (32) Middle
    (33) Right side
    (34) Other (specify): _____
    (35) On or in the lap of another occupant

    Fourth Seat
    (41) Left side
    (42) Middle
    (43) Right side
    (44) Other (specify): _____
    (45) On or in the lap of another occupant

    (97) In or on unenclosed area
    (98) Other seat (specify): _____
    (99) Unknown

11. Occupant's Posture 9
    (0) Normal posture

    Abnormal posture
    (1) Kneeling or standing on seat
    (2) Lying on or across seat
    (3) Kneeling, standing or sitting in front of seat
    (4) Sitting sideways or turned to talk with another occupant or to look out a rear window
    (5) Sitting on a console
    (6) Lying back in a reclined seat position
    (7) Bracing with feet or hands on a surface in front of seat
    (8) Other abnormal posture (specify): _____
    (9) Unknown

This report is authorized by P.L. 89-563, Title 1, Section 106, 108, and 112. While you are not required to respond, your cooperation is needed to make the results of this data collection effort comprehensive, accurate, and timely.

EJECTION/ENTRAPMENT

12. Ejection ϕ
    (0) No ejection
    (1) Complete ejection
    (2) Partial ejection
    (3) Ejection, unknown degree
    (9) Unknown

13. Ejection Area ϕ
    (0) No ejection
    (1) Windshield
    (2) Left front
    (3) Right front
    (4) Left rear
    (5) Right rear
    (6) Rear
    (7) Roof
    (8) Other area (e.g., back of pickup, etc.) (specify):_____
    (9) Unknown

14. Ejection Medium ϕ
    (0) No ejection
    (1) Door/hatch/tailgate
    (2) Nonfixed roof structure
    (3) Fixed glazing
    (4) Nonfixed glazing (specify):
    _____
    (5) Integral structure
    (8) Other medium (specify):
    _____
    (9) Unknown

15. Medium Status (Immediately Prior To Impact) ϕ
    (0) No ejection
    (1) Open
    (2) Closed
    (3) Integral structure
    (9) Unknown

16. Entrapment ϕ
    (NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)
    (0) Not entrapped
    (1) Entrapped
    (9) Unknown

RESTRAINT SYSTEM EVALUATION

17. Manual (Active) Belt System Availability 4
(0) None available
(1) Belt removed/destroyed
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt available—type unknown

Integral Belt Partially Destroyed
(6) Shoulder belt (lap belt destroyed/removed)
(7) Lap belt (shoulder belt destroyed/removed)

(8) Other belt (specify): _____
(9) Unknown

18. Manual (Active) Belt System Use Ø Ø
(00) None used, not available, or belt removed/destroyed
(01) Inoperative (specify): _____
(02) Shoulder belt
(03) Lap belt
(04) Lap and shoulder belt
(05) Belt used—type unknown
(08) Other belt used (specify): _____
(12) Shoulder belt used with child safety seat
(13) Lap belt used with child safety seat
(14) Lap and shoulder belt used with child safety seat
(15) Belt used with child safety seat—type unknown
(18) Other belt used with child safety seat (specify): _____
(99) Unknown if belt used

19. Proper Use of Manual (Active) Belts Ø
(0) None used or not available
(1) Belt used properly
(2) Belt used properly with child safety seat

Belt Used Improperly
(3) Shoulder belt worn under arm
(4) Shoulder belt worn behind back or seat
(5) Belt worn around more than one person
(6) Lap belt worn on abdomen
(7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): _____
(8) Other improper use of manual belt system (specify): _____
(9) Unknown

20. Manual (Active) Belt Failure Modes During Accident Ø
(0) No manual belt used
(1) No manual belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify): _____
(6) Broken retractor
(7) Combination of above (specify): _____
(8) Other manual belt failure (specify): _____
(9) Unknown

21. Air Bag System Availability/Function Ø
(0) Not equipped/not available
(1) Air bag

Non-functional
(2) Air bag disconnected (specify): _____
(3) Air bag not reinstalled
(9) Unknown

22. Air Bag System Deployment Ø
(0) Not equipped/not available
(1) Air bag deployed during accident (as a result of impact)
(2) Air bag deployed inadvertently just prior to accident
(3) Air bag deployed, accident sequence undetermined
(4) Nondeployed
(5) Unknown if deployed
(6) Air bag deployed as a result of a noncollision event during accident sequence (e.g., fire, explosion, electrical)
(9) Unknown

23. Are There Indications of Air Bag System Failure? Ø
(0) Not equipped/not available
(1) No
(2) Yes (specify): _____
(9) Unknown

Note: See Variables 44 through 48 (Page 5) for Information on Automatic Belts

24. Police Reported Restraint Use Ø
(0) None used
(1) Police did not indicate restraint use
(2) Shoulder belt
(3) Lap belt
(4) Lap and shoulder belt
(5) Belt used, type not specified
(6) Child safety seat
(7) Other or automatic restraint (specify): _____
(8) Restrained, type unknown
(9) Police indicated "unknown"

HEAD RESTRAINT AND SEAT EVALUATION

25. Head Restraint Type/Damage by Occupant at This Occupant Position — 3
    (0) No head restraints
    (1) Integral—no damage
    (2) Integral—damaged during accident
    (3) Adjustable—no damage
    (4) Adjustable—damaged during accident
    (5) Add-on—no damage
    (6) Add-on—damaged during accident
    (8) Other (specify): _____
    (9) Unknown

26. Seat Type (this Occupant Position) — 02
    (00) Occupant not seated or no seat
    (01) Bucket
    (02) Bucket with folding back
    (03) Bench
    (04) Bench with separate back cushions
    (05) Bench with folding back(s)
    (06) Split bench with separate back cushions
    (07) Split bench with folding back(s)
    (08) Pedestal (i.e., column supported)
    (09) Other seat type (specify): _____
    (10) Box mounted seat (i.e., van type)
    (99) Unknown

27. Seat Performance (this Occupant Position) — 5
    (0) Occupant not seated or no seat
    (1) No seat performance failure(s)
    (2) Seat adjusters failed
    (3) Seat back folding locks or "seat back" failed
    (4) Seat track/anchors failed
    (5) Deformed by impact of occupant
    (6) Deformed by passenger compartment intrusion (specify): _____
    (7) Combination of above (specify): _____
    (8) Other (specify): _____
    (9) Unknown

CHILD SAFETY SEAT

28. Child Safety Seat Make/Model ϕ ϕ ϕ
(000) No child safety seat
Applicable codes are found in your NASS CDS Data Collection, Coding and Editing
(950) Built-in child safety seat
(997) Other make/model (specify):
_____
(998) Unknown make/model
(999) Unknown if child safety seat used

29. Type of Child Safety Seat ϕ
(0) No child safety seat
(1) Infant seat
(2) Toddler seat
(3) Convertible seat
(4) Booster seat
(7) Other type child safety seat (specify):
_____
(8) Unknown child safety seat type
(9) Unknown if child safety seat used

30. Child Safety Seat Orientation ϕ ϕ
(00) No child safety seat

Designed for Rear Facing for This Age/Weight
(01) Rear facing
(02) Forward facing
(08) Other orientation (specify):
_____
(09) Unknown orientation

Designed For Forward Facing for This Age/Weight
(11) Rear facing
(12) Forward facing
(18) Other orientation (specify):
_____
(19) Unknown orientation

Unknown Design or Orientation For This Age/Weight, or Unknown Age/Weight
(21) Rear facing
(22) Forward facing
(28) Other orientation (specify):
_____
(29) Unknown orientation

(99) Unknown if child safety seat used

31. Child Safety Seat Harness Usage ϕ ϕ

32. Child Safety Seat Shield Usage ϕ ϕ

33. Child Safety Seat Tether Usage ϕ ϕ

Note: Options below applicable to Variables OA31-OA33.
(00) No child safety seat

Not Designed With Harness/Shield/Tether
(01) After market harness/shield/tether added, not used
(02) After market harness/shield/tether used
(03) Child safety seat used, but no after market harness/shield/tether added
(09) Unknown if harness/shield/tether added or used

Designed With Harness/Shield/Tether
(11) Harness/shield/tether not used
(12) Harness/shield/tether used
(19) Unknown if harness/shield/tether used

Unknown If Designed With Harness/Shield/Tether
(21) Harness/shield/tether not used
(22) Harness/shield/tether used
(29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

INJURY CONSEQUENCES

34. Injury Severity (Police Rating) 2

(0) O - No injury
(1) C - Possible injury
(2) B - Nonincapacitating injury
(3) A - Incapacitating injury
(4) K - Killed
(5) U - Injury, severity unknown
(6) Died prior to accident
(9) Unknown

35. Treatment - Mortality 9
(0) No treatment
(1) Fatal
(2) Fatal - ruled disease (specify):

_____

Nonfatal
(3) Hospitalization
(4) Transported and released
(5) Treatment at scene - nontransported
(6) Treatment later
(8) Treatment - other (specify):

_____
(9) Unknown

36. Type Of Medical Facility (for Initial Treatment) 9
(0) Not treated at a medical facility
(1) Trauma center
(2) Hospital
(3) Medical clinic
(4) Physician's office
(5) Treatment later at medical facility
(8) Other (specify):

_____
(9) Unknown

37. Hospital Stay 9 9
(00) Not Hospitalized
_____Code the number of days (up through 60) that the occupant stayed in hospital.
(61) 61 days or more
(99) Unknown

99. Case Occupant ϕ
(0) Not the Case Occupant
(1) This is the Case Occupant
(2) This is the Case Occupant in another case.

38. Working Days Lost 9 9
_____Code the number of days (up through 60) that the occupant lost from work due to the accident
(00) No working days lost
(61) 61 days or more
(62) Fatally injured
(97) Not working prior to accident
(99) Unknown

STOP - GO TO VARIABLE 44 ON PAGE 7

VARIABLES 39 THROUGH 43 ARE COMPLETED BY THE ZONE CENTER

39. Time to Death ϕ ϕ
_____Code number of hours from time of accident to time of death up through 24 hours. If time of death is greater than 24 hours, code number of days. (Note: 1 day = 31, 2 days = 32, ... n days = 30 +n up through 30 days = 60)
(00) Not fatal
(96) Fatal - ruled disease
(99) Unknown

40. 1st Medically Reported Cause of Death ϕ ϕ

41. 2nd Medically Reported Cause of Death ϕ ϕ

42. 3rd Medically Reported Cause of Death ϕ ϕ
_____Code the Occupant Injury from line number(s) for the medically reported injury(s) which reportedly contributed to this occupant's death
(00) Not fatal or no additional causes
(96) Mode of death given but specific injuries are not linked to cause of death. (specify):

_____
(97) Other result (includes fatal ruled disease) (specify):

_____
(99) Unknown

43. Number of Recorded Injuries for This Occupant 9 7
_____Code the actual number of injuries recorded for this occupant.
(00) No recorded injuries
(97) Injured, details unknown
(99) Unknown if injured

AUTOMATIC BELT SYSTEM

44. Automatic (Passive) Belt System Availability/ Function ϕ
(0) Not equipped/not available
(1) 2 point automatic belts
(2) 3 point automatic belts
(3) Automatic belts - type unknown

Non-functional
(4) Automatic belts destroyed or rendered inoperative
(9) Unknown

45. Automatic (Passive) Belt System Use ϕ
(0) Not equipped/not available/destroyed or rendered inoperative
(1) Automatic belt in use
(2) Automatic belt not in use (manually disconnected, motorized track inoperative) (specify):

(3) Automatic belt use unknown
(9) Unknown

46. Automatic (Passive) Belt System Type ϕ
(0) Not equipped/not available
(1) Non-motorized system
(2) Motorized system
(9) Unknown

47. Proper Use of Automatic (Passive Belt System ϕ
(0) Not equipped/not available/not used
(1) Automatic belt used properly
(2) Automatic belt used properly with child safety seat

Automatic Belt Used Improperly
(3) Automatic shoulder belt worn under arm
(4) Automatic shoulder belt worn behind back
(5) Automatic belt worn around more than one person
(6) Lap portion of automatic belt worn on abdomen
(7) Automatic lap and shoulder belt or automatic shoulder belt used improperly with child safety seat (specify):

(8) Other improper use of automatic belt system (specify):
(9) Unknown

48. Automatic (Passive) Belt Failure Modes During Accident ϕ
(0) Not equipped/not available/not in use
(1) No automatic belt failure(s)
(2) Torn webbing (stretched webbing not included)
(3) Broken buckle or latchplate
(4) Upper anchorage separated
(5) Other anchorage separated (specify):

(6) Broken retractor
(7) Combination of above (specify):
(8) Other automatic belt failure (specify):

(9) Unknown

49. Seat Orientation (this Occupant Position) 1
(0) Occupant not seated or no seat
(1) Forward facing seat
(2) Rear facing seat
(3) Side facing seat (inward)
(4) Side facing seat (outward)
(8) Other (specify):

(9) Unknown

STOP - VARIABLES 50 THROUGH 52 ARE COMPLETED BY THE ZONE CENTER

TRAUMA DATA

50. Glasgow Coma Scale (GCS) Score (at Medical Facility) 9 7
(00) Not injured
(01) Injured - not treated at medical facility
(02) No GCS Score at medical facility
(03-15) Code the actual value of the initial GCS Score recorded at medical facility.
(97) Injured, details unknown
(99) Unknown if injured

51. Was the Occupant Given Blood? 9
(1) No - blood not given
(2) Yes - blood given (specify units):
(9) Unknown if blood given

52. Arterial Blood Gases (ABG) - HCO_3 9 7
(00) Not injured
(01) Injured, ABGs not measured or reported
(02-50) Code the actual value of the HCO_3
(96) ABGs reported , HCO_3 unknown
(97) Injured, details unknown
(99) Unknown if injured

ARE ALL APPLICABLE MEDICAL RECORDS INCLUDED WITH INITIAL SUBMISSION? NO [X] YES [ ]

UPDATE CANDIDATE? NO [X] YES [ ]

BEST AVAILABLE COPY

SUMMARY OF CRASHPC RESULTS (USING SPINOUT)

CRASH3 RECONSTRUCTION

SPEED CHANGE (DAMAGE)		TOTAL(KPH)	LONG.(KPH)	LAT.(KPH)	ANG.(DEG)
	VEH #1	16.3	-16.0	2.8	-10.0
	VEH #2	25.8	-3.1	25.6	-83.0

ENERGY DISSIPATED BY DAMAGE VEH#1: 34952.7 JOULES VEH#2: 48023.1 JOULES

SUMMARY OF DAMAGE DATA (* INDICATES DEFAULT VALUE)

VEHICLE # 1		VEHICLE # 2	
TYPE--------CATEGORY	4	TYPE--------CATEGORY	3
STIFFNESS---CATEGORY	5	STIFFNESS---CATEGORY	3
WEIGHT------	1926.0 KGS	WEIGHT------	1213.4 KGS
CDC---------12FDEW1		CDC---------09LZEW3	
L----------	175.3 CM.	L----------	152.4 CM.
C1----------	32.0 CM.	C1----------	18.8 CM.
C2----------	24.6 CM.	C2----------	32.5 CM.
C3----------	20.3 CM.	C3----------	41.1 CM.
C4----------	6.9 CM.	C4----------	44.2 CM.
C5----------	5.6 CM.	C5----------	24.1 CM.
C6----------	9.1 CM.	C6----------	.0 CM.
D----------	.0 CM.	D----------	-132.6 CM.
RHO---------	1.00 *	RHO---------	1.00 *
ANG---------	-10.0 DEG.	ANG---------	-83.0 DEG.
D'----------	-27.0 CM.	D'----------	-138.9 CM.

DIMENSIONS AND INERTIAL PROPERTIES

A1	=	138.9	CM.	A2	=	130.3	CM.
B1	=	150.4	CM.	B2	=	141.0	CM.
TR1	=	157.0	CM.	TR2	=	149.6	CM.
I1	=	466613.1	NEWT-SEC**2-CM	I2	=	261200.5	NEWT-SEC**2-CM
M1	=	19.333	NEWT-SEC**2/CM	M2	=	12.180	NEWT-SEC**2/CM
XF1	=	251.0	CM.	XF2	=	228.1	CM.
XR1	=	-289.6	CM.	XR2	=	-270.3	CM.
YS1	=	97.8	CM.	YS2	=	92.2	CM.

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SUMMARY OF CRASHPC RESULTS (USING SPINOUT)

CRASH3 RECONSTRUCTION

SPEED CHANGE (DAMAGE)		TOTAL(MPH)	LONG.(MPH)	LAT.(MPH)	ANG.(DEG)
	VEH #1	10.1	-10.0	1.8	-10.0
	VEH #2	16.1	-2.0	15.9	-83.0

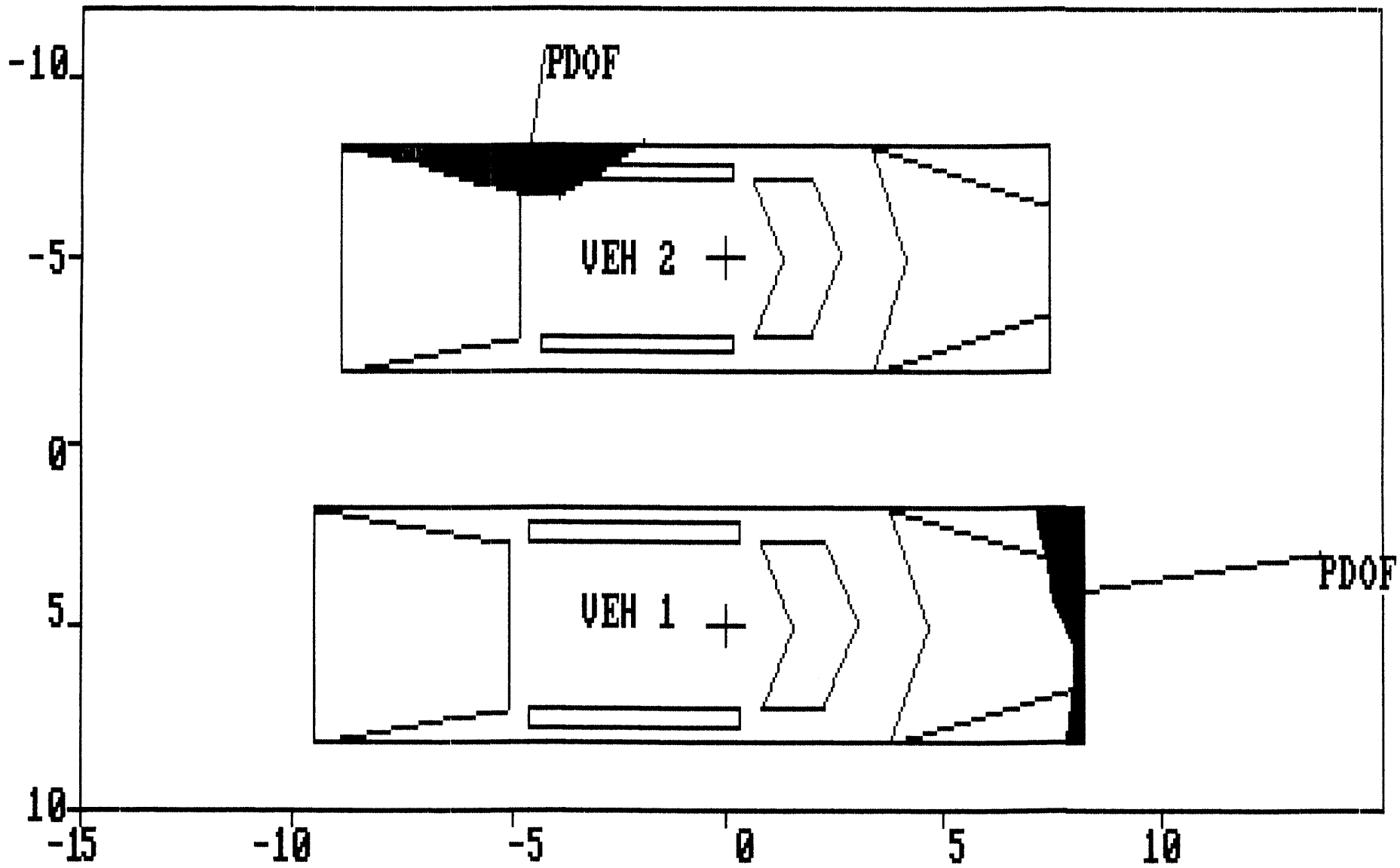
ENERGY DISSIPATED BY DAMAGE VEH#1: 25776.4 FT-LB VEH#2: 35415.3 FT-LB

SUMMARY OF DAMAGE DATA (* INDICATES DEFAULT VALUE)

VEHICLE # 1		VEHICLE # 2	
TYPE	CATEGORY 4	TYPE	CATEGORY 3
STIFFNESS	CATEGORY 5	STIFFNESS	CATEGORY 3
WEIGHT	4246.0 LBS.	WEIGHT	2675.0 LBS.
CDC	12FDEW1	CDC	09LZEW3
L	69.0 IN.	L	60.0 IN.
C1	12.6 IN.	C1	7.4 IN.
C2	9.7 IN.	C2	12.8 IN.
C3	8.0 IN.	C3	16.2 IN.
C4	2.7 IN.	C4	17.4 IN.
C5	2.2 IN.	C5	9.5 IN.
C6	3.6 IN.	C6	.0 IN.
D	.0	D	-52.2
RHO	1.00 *	RHO	1.00 *
ANG	-10.0 DEG.	ANG	-83.0 DEG.
D'	-10.6 IN.	D'	-54.7 IN.

DIMENSIONS AND INERTIAL PROPERTIES

A1	= 54.7	IN.	A2	= 51.3	IN.
B1	= 59.2	IN.	B2	= 55.5	IN.
TR1	= 61.8	IN.	TR2	= 58.9	IN.
I1	= 41300.8	LB-SEC**2-IN	I2	= 23119.3	LB-SEC**2-IN
M1	= 11.040	LB-SEC**2/IN	M2	= 6.955	LB-SEC**2/IN
XF1	= 98.8	IN.	XF2	= 89.8	IN.
XR1	= -114.0	IN.	XR2	= -106.4	IN.
YS1	= 38.5	IN.	YS2	= 36.3	IN.



DAMAGE DESCRIPTION

CRASHPC PROGRAM SUMMARY

(All Measurements In Metric)

NATIONAL ACCIDENT SAMPLING SYSTEM
CRASHWORTHINESS DATA SYSTEM

Unit	Case No.-Stratum	Accident Event Sequence No.	Date (Month, day, year) of Run
	DSI-93-AB-007	01	[redacted] 93

C Vehicle Identification

	Year	Make	Model	NASS Veh. No.
ehicle 1	1990	LINCOLN	TOWNCAR	01
Vehicle 2	1979	FORD	MUSTANG II	02

GENERAL INFORMATION

	VEHICLE 1	VEHICLE 2
Size	4	3
Weight	1826 (Curb) + 100 (Occupant(s)) + 000 (Cargo) = 1926 kg	1141 (Curb) + 72 (Occupant(s)) + 000 (Cargo) = 1213 kg
CDC	12FDEW1	09LZEW3
PDOF (-180 to +180)	-010°	-083°
Stiffness	5	3

SCENE INFORMATION

Rest and Impact Positions [ ] No, *Go To Damage Information* [ ] Yes

		VEHICLE 1	VEHICLE 2
Rest Position	X	___.___ m	___.___ m
	Y	___.___ m	___.___ m
	PSI	___°	___°
Impact Position	X	___.___ m	___.___ m
	Y	___.___ m	___.___ m
	PSI	___°	___.___°
Slip Angle(-180 to +180)		___°	___°

VEHICLE MOTION

Sustained Contact [ ] No [ ] Yes

	VEHICLE 1	VEHICLE 2
Skidding (Rotation)	[ ] No [ ] Yes	[ ] No [ ] Yes
Skidding Stop Before Rest	[ ] No [ ] Yes	[ ] No [ ] Yes
End of Rotation Position X	___.___ m	___.___ m
Y	___.___ m	___.___ m
PSI	___°	___°
Curved Path	[ ] No [ ] Yes	[ ] No [ ] Yes
Point on Path X	___.___ m	___.___ m
Point on Path Y	___.___ m	___.___ m
Rotation Direction	[ ] None [ ] CW [ ] CCW	[ ] None [ ] CW [ ] CCW
Rotation >360°	[ ] No [ ] Yes	[ ] No [ ] Yes

National Accident Sampling System-Crashworthiness Data System: CRASHPC Program Summary

FRICTION INFORMATION

Coefficient of Friction . ___ ___ ___

Rolling Resistance Option ___

Vehicle 1 Rolling Resistance

LF ___ . ___ ___ RF ___ . ___ ___

LR ___ . ___ ___ RR ___ . ___ ___

Vehicle 2 Rolling Resistance

LF ___ . ___ ___ RF ___ . ___ ___

LR ___ . ___ ___ RR ___ . ___ ___

TRAJECTORY INFORMATION

Trajectory Data [ ] No [ ] Yes

If No, Go To Damage Information

Vehicle 1 Steer Angles

LF ___ ___ ___ ° RF ___ ___ ___ °

LR ___ ___ ___ ° RR ___ ___ ___ °

Vehicle 2 Steer Angles

LF ___ ___ ___ ° RF ___ ___ ___ °

LR ___ ___ ___ ° RR ___ ___ ___ °

Terrain Boundary [ ] No [ ] Yes

First Point

X ___ ___ ___ . ___ m Y ___ ___ ___ . ___ m

Second Point

X ___ ___ ___ . ___ m Y ___ ___ ___ . ___ m

Secondary Coefficient of Friction . ___ ___ ___

DAMAGE INFORMATION

	VEHICLE 1		VEHICLE 2	
Damage Length	L	175 cm	L	152 cm
Crush Depths	C_1	032 cm	C_1	019 cm
	C_2	025 cm	C_2	033 cm
	C_3	020 cm	C_3	041 cm
	C_4	007 cm	C_4	044 cm
	C_5	006 cm	C_5	024 cm
	C_6	009 cm	C_6	000 cm
Damage Offset	D	± 000 cm	D	⊖ 133 cm

IF THIS COMMON IMPACT WAS WITH A MOTOR VEHICLE *NOT IN TRANSPORT,* FILL IN THE INFORMATION BELOW.

Model Year: _____

Make: _____

Model: _____

VIN: _____

The Weight, CDC, Scene Data and Damage Information for this vehicle should be recorded above.

Complete and ATTACH the appropriate vehicle damage sketch and dimensions to the Form.

AIRBAG SUPPLEMENT

ACCIDENT SUMMARY

1. Accident Date: [redacted]-93

2. Police Investigated [1]

   (1) Yes
   (2) No
   (3) Unknown

   Agency: STATE POLICE
   City: [redacted], N.C.
   County: [redacted]

3. General Locality [2]

   (1) Freeway, Limited Access
   (2) Urban (City)
   (3) Urban-Rural (mixed)
   (4) Rural, Fields

4. Configuration (First Harm) [4]
   (0) Struck Object or Ped
   (1) Rear-End
   (2) Head-On
   (3) Rear-to-Rear
   (4) Angle
   (5) Sideswipe-Same Direction
   (6) Sideswipe-Opposite Dir.
   (7) Noncollision
   (8) Nonimpact Deployment
   (9) Unknown

5. Fire Involved [0]
   (0) None
   (1) Airbag Vehicle
   (2) Other Vehicle
   (3) Both Vehicles
   (9) Unknown

6. Vehicles Involved [2]

7. Persons Involved [3]

8. Injured Persons [3]

9. Maximum AIS in Accident [1]

AIRBAG VEHICLE INSPECTION

10. Date Vehicle Inspected: [redacted]-93

11. Reason Vehicle Not Inspected [1]
    (0) Not Required
    (1) Inspection Completed
    (2) Cannot be Located
    (3) Repaired or Destroyed
    (5) Refusal or Impounded
    (7) Other:

12. Impact Data Obtained [4]
    (0) No Data Obtained
    (1) CDC Only
    (2) Crush Profile Only
    (3) Trajectory Data Only
    (4) CDC and Crush Profile
    (5) CDC and Trajectory
    (6) Crush and Trajectory
    (7) CDC, Crush, and Trajectory

13. Basis of Delta-V [1]
    (0) Not Computed (Unknown why)
    (1) CRASH - Damage Only
    (2) CRASH - Damage + Traj
    (3) OLDMISS
    (4) POLES
    (5) Unknown Basis
    (6) One Vehicle Beyond Scope
    (7) Collision Beyond Scope
    (8) Insufficient Data

VEHICLE HISTORY

14. Prior Impacts for AB Vehicle? [1]

    (1) Yes
    (2) No
    (9) Unknown

15. Prior AB Maintenance or Service [2]

    (1) Yes, (2) No, (9) Unknown

    Describe:

AIRBAG SUPPLEMENT

AIRBAG VEHICLE
Fleet: NONE
VIN: 1LNLM81F5LYxxxxxx
Mileage: 123,827 km (76,959 mi)

SYSTEM READINESS LAMP

16. Pre-Impact Lamp Condition [1]
(1) Functioning/Proved Out
(2) Inoperative
(9) Unknown

17. Driver's Report of Pre-Impact Flashing [00]
(00) No Flashing Reported
(01) Continuous Flashing
(02) Number of Flashes: ___
(11)
(12) Constant Light
(19) Flashing, Unknown Number
(88) Not Applicable, System Removed
(99) Unknown

18. Period of Pre-Impact Flashing [0]
(0) No Flashing
(1) Same Day as Impact
(2) Prior Day
(3) Prior Two Days
(4) Prior Week
(5) Prior Month
(6) Over One Month
(9) Unknown

19. Post-Impact Lamp Condition [1]
(1) Functioning/Proved Out
(2) Inoperative
(9) Unknown

20. Post-Impact Flashing [07]
(00) No Flashing Reported
(01) Continuous Flashing
(02) Number of Flashes: 07
(11)
(12) Constant Light
(19) Flashing, Unknown Number
(88) Not Applicable, System Removed
(99) Unknown

21. Airbag Vehicle First Harmful Event [13]
(01) Fire or explosion
(02) Immersion
(03) Gas Inhalation
(04) Fell from vehicle
(05) Injured in vehicle
(06) Other noncollision (specify):
(07) Overturn
(08) Jackknife
COLLISION WITH:
(09) Pedestrian
(10) Pedalcyclist
(11) Railway train
(12) Animal
(13) Motor vehicle in transport (same roadway)
(14) Motor vehicle in transport (other roadway)
(15) Parked motor vehicle
(16) Other type nonmotorist (specify):
(17) Thrown or falling object
(18) Boulder
COLLISION WITH FIXED OBJECT
(20) Building
(21) Impact attenuator/crash cushion
(22) Bridge pier or abutment
(23) Bridge parapet end
(24) Bridge rail
(25) Guardrail
(26) Concrete traffic barrier
(27) Median barrier
(28) Other longitudinal barrier (specify):
(29) Highway/traffic sign post
(30) Overhead sign support
(31) Luminaire/light support
(32) Utility pole
(33) Other post, pole, or support
(34) Culvert
(35) Curb
(36) Ditch
(37) Embankment-earth
(38) Embankment-rock, stone, or concrete
(39) Fence
(40) Wall
(41) Fire hydrant
(42) Shrubbery
(43) Tree
(44) Other fixed object (specify):
(45) Pavement surface irregularity
(99) Unknown

AIRBAG SUPPLEMENT

AIRBAG VEHICLE IMPACT SUMMARY

22. Vehicle Role [3]
- (0) Noncollision
- (1) Striking unit
- (2) Struck unit
- (3) Both striking and struck
- (9) Unknown

23. Manner of Leaving Scene [2]
- (1) Driven
- (2) Towed-due to damage
- (3) Towed-not for damage
- (4) Towed-details unknown
- (5) Abandoned
- (9) Unknown

24. Number of Impact Events [1]
- (8) 8 or more
- (9) Unknown

25. Rollover [ϕ]
- (0) No rollover
- (1) First event
- (2) Subsequent event
- (3) Yes, Unknown event
- (9) Unknown

26. Override/Underride [ϕ]
- (0) No override/underride
- (1) Override - 1st CDC
- (2) Override - Other CDC
- (3) Underride - 1st CDC
- (4) Underride - Other CDC
- (9) Unknown

AIRBAG VEHICLE DAMAGE

CODES: (1) Yes, (2) No, (9) Unknown

27. Left Front Fender Damage [1]

28. Right Front Fender Damage [2]

29. Center Top of Grille Damage [1]

FRONT BUMPER E.A. STATUS

30. Left [3]

31. Right [1]
- (1) Normal
- (2) Extended
- (3) Partial Compression
- (4) Complete Compression
- (5) Not Applicable
- (9) Unknown

FIRST AIRBAG VEHICLE IMPACT:

32. Configuration [4]
- (0) Struck Object or Ped
- (1) Rear-End
- (2) Head-On
- (3) Rear-to-Rear
- (4) Angle
- (5) Sideswipe-Same Direction
- (6) Sideswipe-Opposite Dir.
- (7) Noncollision
- (8) Nonimpact Deployment
- (9) Unknown

33. CDC: 12FDEW1

34. Object Contacted: 1979 MUSTANG II

PRIMARY/DEPLOYMENT IMPACT:

35. Event Number [1]

36. Total Delta-V (10mph) [16] KPH

37. Longitudinal Delta-V (-10mph) [-16] KPH

38. Configuration [4]
See 32 above for codes

39. CDC: 12FDEW1

40. Object Contacted: 1979 MUSTANG II

AIRBAG SUPPLEMENT

AIRBAG SYSTEM DAMAGE

CODES: (1) Yes, Damaged
(2) No, Intact
(3) Not Applicable
(9) Unknown

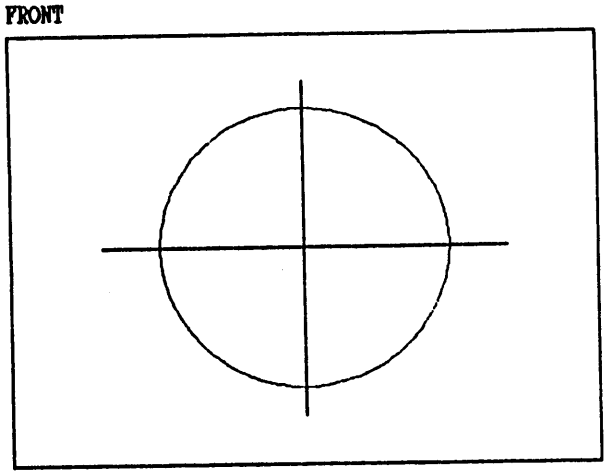
		DRIVER	PASS
41.	Airbag Module	2	2
42.	Left Front Sensor		1
43.	Center Front Sensor		2
44.	Right Front Sensor		2
45.	Rear Cowl Sensor		2
46.	Diagnostic Module		2
47.	Wiring		2
48.	Knee Diverter		3
49.	Indication of disconnected or loose electrical connectors		2
50.	Condition of Deployed Bag	DRIVER'S 8	PASS. 1

(1) Bag intact
(2) Split or torn
(3) Cut by object in impact
(4) Cut after accident
(5) Other
(8) NA (not deployed)
(9) Unknown

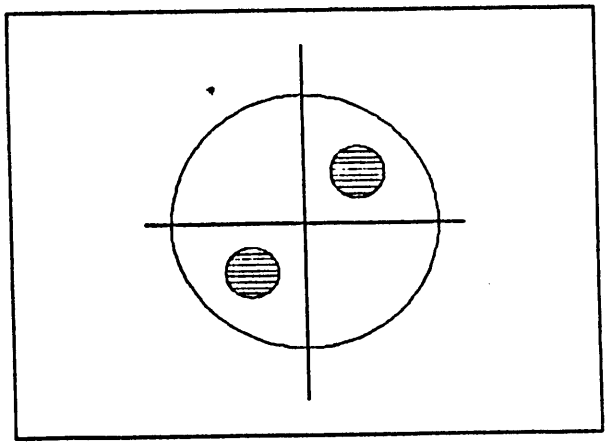
DESCRIBE SYSTEM AND BAG DAMAGE:
No Damage

NOTE DAMAGE AND CONTACT MARKS ON AIRBAG DIAGRAMS BELOW: None

FRONT



BACK



AIRBAG SUPPLEMENT

OCCUPANTS OF AIRBAG CAR

51. Number of Occupants in Vehicle [2]

52. Number of Injured Persons [2]

53. Maximum AIS in Airbag Vehicle [1]
(0) No Injury
(1-6) AIS Severity
(7) Injured, unknown severity
(9) Unknown

DRIVER

Age: 35

Sex: FEMALE

54. Number of Driver Injuries [6]

55. Source of Best Injury Data [4]
(0) Not injured
(1) Autopsy
(2) Hospital Medical Records
(3) Emergency Room only
(4) Private physician, clinic
(5) Lay Coroner Report
(6) EMS Personnel
(7) Interviewee
(8) Police
(9) Unknown

MAXIMUM AIS BY BODY REGION

REGION	MAX AIS	CONTACT
Head/Neck/Face	1	92
Chest	1	41
Abdomen	1	41
Legs/Hips	1	41
Other (Arms)		
Driver Maximum	1	41

EJECTION NONE

Extent: N/A

Portal: N/A

OTHER VEHICLE:

Maximum AIS 7

Prime/Deploy Impact w AB Vehicle Event Number 1

CDC: 09LZEW3

Total Delta V (16MPH) 26 KPH

Make: FORD

Model Year: 1979

Model: MUSTANG II

Body Type: 3 DOOR

NOTES:

AIRBAG SUPPLEMENT

DRIVER BELT USAGE: (1) Used (2) Not Used (9) Unknown 1

Evidence:

DRIVER POSTURE: Any comments Recorded (1) Yes, (2) No 2

Describe driver's posture and position on seat including specific comments on head, torso, buttocks, legs, and feet. Also note hand and arm position. Did driver brace before crash? Describe:

DRIVER FOREIGN OBJECTS: Comments Recorded (1) Yes, (2) No 2

Was driver wearing contact lenses or eyeglasses? Or holding any foreign object at the time of the impact (packages on lap, pipe, food, bottle, cigarette, etc.)? Did any lenses, objects, or jewelery play any role?:

DRIVER COMMENTS: Comments Recorded (1) Yes, (2) No 2

Was the driver aware that the vehicle was equipped with a supplemental restraint system? Did driver offer any comments on smoke, noise, etc.? Did the driver comment on the airbag as a restraint system? Describe:

PASSENGER-AIRBAG CONTACT: (1) Yes, (2) No, (9) Unknown 1

Describe: PASSENGER SIDE AIRBAG

DMV-349 (Rev. 1/92)

2 No. of Units Involved

☐ Supplemental Report

THIS REPORT IS FOR THE USE OF THE DIVISION OF MOTOR VEHICLES. THE DATA IS COLLECTED FOR STATISTICAL ANALYSIS AND SUBSEQUENT HIGHWAY SAFETY PROGRAMMING. DETERMINATIONS OF "FAULT" ARE THE RESPONSIBILITY OF INSURERS OR OF THE STATE'S COURTS.

Do not write in these spaces
DMV REPORT #

Date (MONTH DAY YEAR)	Day of Week	County	Time (24 Hour Clock)	Local Use / Patrol Area	Date Received by DMV
[redacted] 93	[redacted]		[redacted]		

LOCATION

Collision occurred ☐ In ☒ Near _____ Municipality or .80 Miles ☐ N ☐ S ☒ E ☐ W outside municipality

on _____ Highway Number, or Highway, Street. (If ramp or service road, indicate on line) (R.R Crossing # _____) . Miles .50 ft. (0 ft.-Intersection) ☐ N ☐ S ☐ E ☒ W

cross from _____ Use Highway Number, Street Name or Adjacent County or State Line toward _____ Use Highway Number, Street Name or Adjacent County or State Line

☒ VEHICLE 1 ☐ HIT & RUN

Driver _____ First Middle Last

Address _____

City _____ State _____ Zip _____

Same Address on Driver's License? ☒ Yes ☐ No , Driver's Phone No ( ) _____

D.L.# _____ State _____ DOB 57 month/day/year

Vision 1. Obstruction 1 Physical 2. Condition 1 3. Intoxication 1 Restrictions 0

Owner SAME AS DRIVER

Address _____

City _____ State _____ Zip _____

VIN 1LNLM81F6LY

Plate # _____ State _____ Year 93

Veh. Year 90 Veh. Make LINC Veh. Type Code P

Commercial Vehicle	☐ Yes	☒ No	Trailer Type Code
Air Bag	☒ Yes	☐ No	1st Trailer No. of Axles
Deployed PASSENGER	☒ Yes	☒ No DRIVER	Width inches
Vehicle Drivable	☐ Yes	☒ No	Length feet
Post Crash Fire	☐ Yes	☒ No	2nd Trailer No. of Axles
Rollover	☐ Yes	☒ No	Width inches
Hazardous Cargo	☐ Yes	☒ No	Length feet
Spilled	☐ Yes	☒ No	TAD
Crossed Median	☐ Yes	☒ No	Est. Damage $ 3500.00

Removed to _____

By [redacted] Authority ROTATION

☒ VEHICLE 2 ☐ PEDESTRIAN ☐ HIT & RUN ☐ OTHER

Driver 2 _____ First Middle Last

Address _____

City _____ State _____ Zip _____

Same Address on Driver's License? ☒ Yes ☐ No Driver's Phone No. _____

D.L.# _____ State _____ DOB 72 month/day/year

Vision 1. Obstruction 1 Physical 2. Condition 1 3. Intoxication 1 Restrictions 0

Owner _____

Address SAME AS DRIVER

City _____ State _____ Zip _____

VIN 9R039

Plate # _____ State _____ Year 94

Veh. Year 79 Veh. Make FORD Veh. Type Code P

Commercial Vehicle	☐ Yes	☒ No	Trailer Type Code
Air Bag	☐ Yes	☒ No	1st Trailer No. of Axles
Deployed	☐ Yes	☒ No	Width inches
Vehicle Drivable	☐ Yes	☒ No	Length feet
Post Crash Fire	☐ Yes	☒ No	2nd Trailer No. of Axles
Rollover	☐ Yes	☒ No	Width inches
Hazardous Cargo	☐ Yes	☒ No	Length feet
Spilled	☐ Yes	☒ No	TAD
Crossed Median	☒ Yes	☐ No	Est. Damage $ 500.00

Removed to _____

By [redacted] Authority ROTATION

Other Property Damaged NONE — Estimated Damage $ — Owner Name _____ Address _____

OCCUPANT SECTION INSTRUCTIONS: Give Injury Class, Belt/Helmet Usage, Race/Sex and Age of all occupants in the space corresponding to the seat occupied (see codes at top). Names and addresses are necessary for persons who were injured.

Seat	4. Inj. Class	5. Belt /Hel.	Race /Sex	Age	Injured Names and Addresses First Name Last Name
Left Front	B	3	W F	35	[redacted]
Center Front					
Right Front	C	3	W M	11	
Left Rear					
Center Rear					
Right Rear					

Seat	4. Inj. Class	5. Belt /Hel.	Race /Sex	Age	Injured Names and Addresses First Name Last Name
Left Front	B	1	W M	21	[redacted]
Center Front					
Right Front					
Left Rear					
Center Rear					
Right Rear					

Total Number Occupants 2 Total Number Injured 2 Total Number Occupants 1 Total Number Injured 1

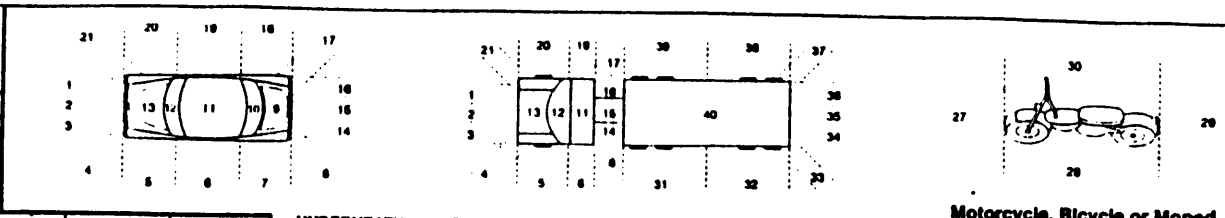
Ambulance Requested ☒ Yes ☐ No If yes, Ambulance Arrived At 1525 (24 Hour Clock)

Injured Taken To [redacted] (Treatment Facility and City or Town)

MARKS > < ADDED BY _____ (Initial) — Send To

BEST AVAILABLE COPY

POINTS OF INITIAL CONTACT (Write in Codes)	
VEH. 1	VEH. 2
1	7
2	
3	



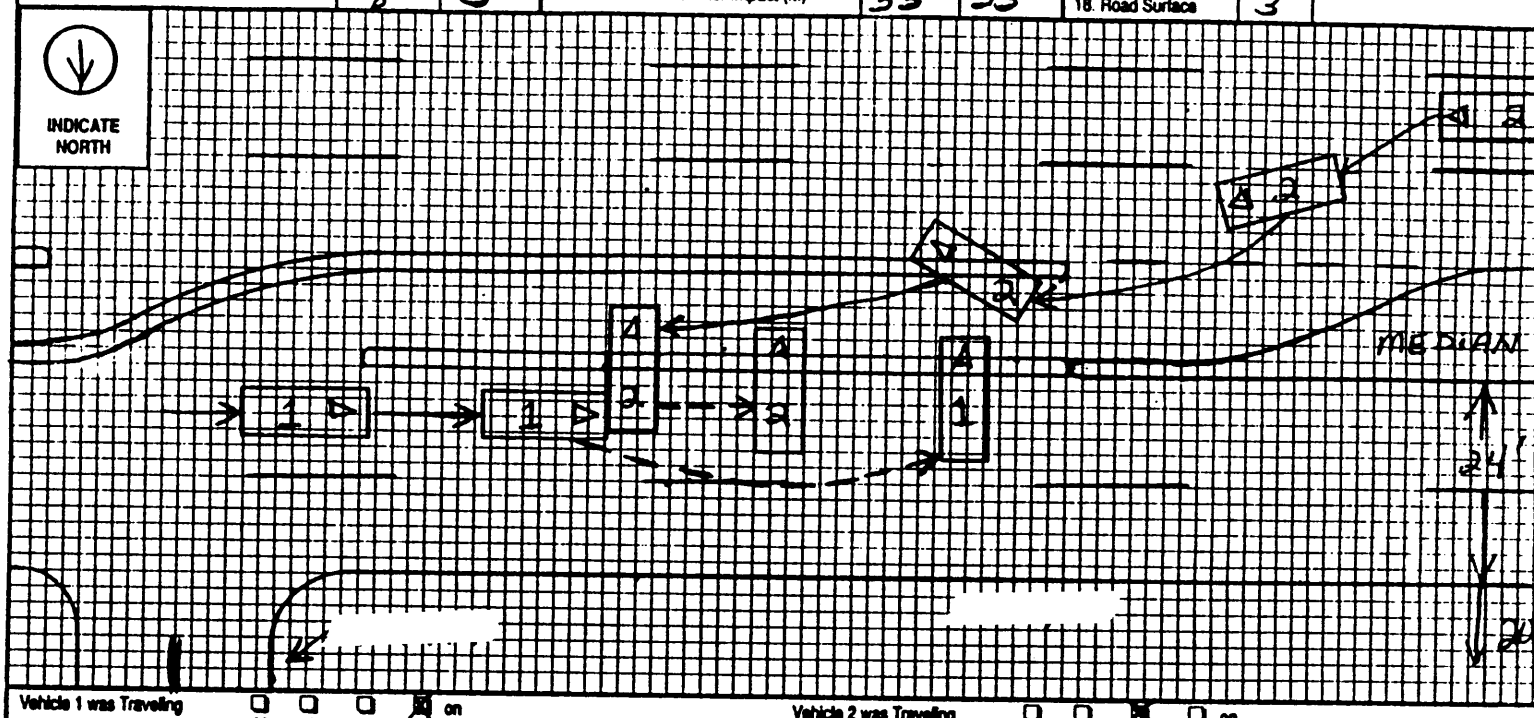
ACCIDENT SEQUENCE	Veh. 1	Veh. 2 or Ped.
6. Vehicle Maneuver/Pedestrian Action	4	5
7. First Harmful Event	2	
7. Most Harmful Event	22	22
8. Object Struck	1	1
9. Distance to Object Struck	8	8
10. Vehicle Defects	8	5

UNDERNEATH: 22. Front 23. Center 24. Rear 26. Unknown

Motorcycle, Bicycle or Moped

	Veh. 1	Veh. 2 or Ped.
Speed Limit (for each vehicle)	50	50
Estimated Original Traveling Speed	45	45
Estimated Speed at Impact	45	40
Tire Impressions Before Impact (ft.)	0	0
Distance Traveled After Impact (ft.)	55	25

ROADWAY INFORMATION (See Front)			
11. Locality	3	19. Road Defects	1
12. Development Type	3	20. Road Condition	3
13. Road Feature	14	21. Light Condition	1
14. Road Character	1	22. Weather	3
15. Road Class	2	23. Traffic Control	11
16. Number of Lanes	4	Operating ☐ Yes ☐ N	
17. Road Configuration	3	Visible ☐ Yes ☐ N	
18. Road Surface	3		



Vehicle 1 was Traveling ☐ N ☐ S ☐ E ☒ W on

Vehicle 2 was Traveling ☐ N ☐ S ☒ E ☐ W on

DESCRIBE WHAT HAPPENED: VEH#1 WAS TRAVELING WEST ON VEH#2 TRAVELING EAST ON CHANGED LANES FROM THE CENTER LANE TO THE LEFT LANE. VEH#2 LOST CONTROL ON THE WET PAVEMENT, SKIDDED ACROSS THE CONCRETE MEDIAN BARRIERS AND WENT INTO THE INSIDE WESTBOUND LANE IN FRONT OF VEH#1. VEH#1 COULDN'T STOP IN TIME AND STRUCK VEH#2 IN THE LEFT REAR QUARTER. BOTH VEHICLES CAME TO REST ON TOP OF THE CONCRETE MEDIAN BARRIERS.

CIRCUMSTANCES CONTRIBUTING TO THE COLLISION (Check as many as apply)

	DRIVER 1	DRIVER 2
1. None	☒	☐
2. Alcohol use	☐	☐
3. Drug use	☐	☐
4. Yield	☐	☐
5. Stop sign	☐	☐
6. Signal	☐	☐
7. Exceeding speed limit	☐	☐
8. Exceeding safe speed	☒	☐
9. Failure to reduce speed	☐	☐
10. Pass stopped school bus	☐	☐
11. Passing on hill	☐	☐
12. Passing on curve	☐	☐
13. Other improper passing	☐	☐
14. Improper lane change	☐	☐
15. Use of improper lane	☐	☐
16. Improper turn	☐	☐
17. Improper or no signal	☐	☐
18. Improper vehicle equipment	☐	☒
19. Safe movement violation	☐	☐
20. Following too closely	☐	☐
21. Improper backing	☐	☐
22. Improper parking	☐	☐
23. Unable to determine	☐	☐
24. Left of center	☐	☐
25. Right turn on red	☐	☐
26. Other	☐	☐

RESERVED FOR CITY OR OTHER USE

RESERVED FOR STATE USE

	Driver 1	Driver 2
24. Direction		
25. Violation		
26. Misc. Action		
27. Charges		

28. Investigating Agency

WITNESSES: Name _____ Address _____ Phone No. _____

Name _____ Address _____ Phone No. ( )

ARRESTS: Name DRIVER #2 Charge(s) IMPROPER TIRES

Name _____ Charge(s) _____

Print Here _____ Officer's Rank and Name _____ Number _____ Department _____ [redacted]-93 Date of Report

BEST AVAILABLE COPY

BEST AVAILABLE COPY

PATIENT COPY

FM. 105 (REV. 12/92)

____ MEDICAL CENTER

EMERGENCY/OP RECORD

ADMISSION DATE AND TIME [redacted]

MODE OF ARRIVAL: RESCUE

PREVIOUS ADM. DATE

TYPE: S W

ACCOUNT NO.

DIABETIC	ORGAN DONOR	SEX	RACE	MS	AGE	SMOKER	LIVE WILL	RELIGION	FIN. CLASS	VIP CD.	COUNTY	REG. BY	GOLD CARE	MED REC NO
N	N	F	W	M	[redacted]	N	N	TWS	[redacted]			CHA		

PT: TEL / SSN / DOB [redacted] / REL S

RESP PTY: TEL / SSN

PAT REP: NONE

ACT: TEL / SSN

REM REP:

POL. # / GP. # / REL C

INS 2 POL. # / GP.

INS 0000 / POL. # / GP. # / REL

I request to be seen by the Emergency Physician _____

I request that my private physician be notified _____

COMPLAINT: A/MULTIPLE INJ

SERVICE	PATIENT'S PHYSICIAN	ATTENDING PHYSICIAN
MED		

LAST TETANUS	TEMP. 97	ORAL / TYMPANIC	PULSE	RESP.	BP	WT.	RN SIGNATURE

ALLERGIES: NKDA

MEDICATIONS:

TRIAGE TIME	TIME IN ROOM
M.D. IN TO SEE	ED ASSIGNED RM. #

IMPORTANT INFORMATION

This is the patient's copy of your Emergency Department Record. Please review the above information for accuracy and completeness. Pay special attention to the name, address, telephone number and insurance policy numbers.

1. [redacted]nsurance Information

   If you have insurance but did not have the necessary information in order for the hospital to bill at the time you were registered, please call the insurance department at Monday thru Friday 8:00 AM to 5:00 PM.

2. Emergency Department Physician's Charges

   If you are treated by an Emergency Department Physician, you will receive a separate bill for his services from a private billing company. If you did not give your insurance information upon registration, you will need to call locally at and give them your insurance information.

3. Radiology Charges

   If you have x-rays made, the radiologist will bill you separately for the reading of your x-rays.

The examination and treatment you have received in the Emergency/Outpatient Department has been rendered on an emergency basis only and is not intended to be a substitute for complete continuing medical care. Your records and test reports will be available to your personal physician or the local physician on call at the time you were seen. It is important that you report to this physician any new or remaining medical problems, because it is frequently impossible to recognize and treat all elements of injury or illness in a single Emergency/Outpatient Department visit.

TREATMENT DIAGNOSTIC & THERAPEUTIC ORDERS

LAB

X-RAY

C-Spine > X-Rays
L-Spine / lat Sp
Chest Rib Series
Pelvis
R Hip

TREATMENT

Pain Rx

EKG ____ IV ____

ABG ____ O_2 ____

DIAGNOSIS:

Dx: acute cervical and lumbar strain; muscle strain R hip; contusion of jaw

INSTRUCTIONS TO PATIENT:

use an ice pack to sore area for 1/2 hr every 2 hrs for 24 hrs while awake; after 24 hrs start using a heat pack to sore area for 1/2 hr 3-4 times per day. Head injury sheet. Take pain medication as directed. If your jaw is still bothering you tomorrow call Dr. and arrange for a recheck. If not well after one week with your neck or back call Dr. and arrange for a recheck.

OBSERVATION	DATE
FROM:	
TO:	

DISPOSITION	DATE
☐ DISCHARGED	
☐ ADMITTED	

TO ROOM # ____

☐ AMBULATORY ☐ WHEEL CHAIR ☐ STRE
☐ REFERRED ☐ RETURN

☐ LEFT AMA ____

☐ TRANSFERRED TO ____

RETURN DATE

LEVEL CODE 1 2 3 4

I ____ that I understand the instructions given me.

Signature of Physician

WORK EXCUSED: ____ DAYS

I GIVE CONSENT FOR TREATMENT AND AUTHORIZE [illegible] OF RECORDS FOR INSURANCE CLAIMS AS THEY [illegible] ON THE REVERSE SIDE OF THIS FORM. I [illegible] THAT PAYMENT FOR SERVICES RENDERED [illegible] PAYABLE AT TIME OF TREATMENT.

DATE ____ WITNESS ____ PATIENT OR AUTHORIZED REP. ____

BEST AVAILABLE COPY

PATIENT COPY

FM. 105 (REV. 12/92)

MEDICAL CENTER

EMERGENCY/OP RECORD

ADMISSION DATE AND TIME: [redacted]

MODE OF ARRIVAL: RESCUE

PREVIOUS ADM. DATE

TYPE: E/W

ACCOUNT NO.

DIABETIC	ORGAN DONOR	SEX	RACE	MS	AGE	SMOKER	LIVE WILL	RELIGION	FIN. CLASS	VIP CD.	COUNTY	REG. BY	GOLD CARE	MED. REC. NO.
N	N	M	W	S	[redacted]	N		NST	0000			CHA		

PATIENT: TEL / SSN / DOB [redacted] / REL.

RESP. PTY.: TEL / SSN / REL.

CONTACT: TEL / SSN / REL.

PAT. EMP: CHILD

RES. EMP:

INS. 1: 0000 SELF PAY — POL. # / GP. # / REL.

INS. 2: 0000 — POL. # / GP. # / REL.

INS. 3: 0000 — POL. # / GP. # / REL.

I request to be seen by the Emergency Physician _____ Ir

I request that my private physician be notified _____ Ir

COMPLAINT: AYNECK PAIN

SERVICE: MED | PATIENT'S PHYSICIAN | ATTENDING PHYSICIAN

LAST TETANUS | TEMP | ☐ ORAL ☐ TYMPANIC | PULSE | RESP. | BP | WT. | RN SIGNATURE

ALLERGIES

MEDICATIONS

TRIAGE TIME | TIME IN ROOM

M.D. IN TO SEE | ED ASSIGNED RM. #

IMPORTANT INFORMATION

This is the patient's copy of your Emergency Department Record. Please review the bove information for accuracy and completeness. Pay special attention to the name, ddress, telephone number and insurance policy numbers.

1. [redacted]nsurance Information

   If you have insurance but did not have the necessary information in order for the hospital to bill at the time you were registered, please call the insurance department at , Monday thru Friday 8:00 AM to 5:00 PM.

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DIAGNOSIS: Dx: acute cervical strain; abrasion chin

INSTRUCTIONS TO PATIENT: wash abrasion twice daily and apply Neosporin; leave open to air if able to tolerate it; take Tylenol every 4 hrs for pain. Head injury sheet. Recheck in the ER or with the health department pediatrician if any problems.

I certify that I understand the instructions given me.

Signature of Physician

WORK EXCUSED: YES / NO _____ DAYS

I HEREBY GIVE CONSENT FOR TREATMENT AND AUTHORIZE RELEASE OF RECORDS FOR INSURANCE CLAIMS AS THEY PERTAIN ON THE REVERSE SIDE OF THIS FORM. I UNDERSTAND THAT PAYMENT FOR SERVICES RENDERED ARE DUE AND PAYABLE AT TIME OF TREATMENT.

DATE | WITNESS | PATIENT OR AUTHORIZED SER

TREATMENT DIAGNOSTIC & THERAPEUTIC ORDERS

LAB | TI

X-RAY | TI

C-spine (x table lat 1st)

TREATMENT | TI

EKG _____ IV _____

ABG _____ O_2 _____

OBSERVATION	DATE	TI
FROM:		
TO:		

DISPOSITION	DATE	TI
☐ DISCHARGED		
☐ ADMITTED		

TO ROOM # _____

☐ AMBULATORY ☐ WHEEL CHAIR ☐ STRETC

☐ REFERRED ☐ RETURN

☐ LEFT AMA _____

☐ TRANSFERRED TO _____

RETURN DATE | LEVEL CODE 1 2 3 4

BEST AVAILABLE COPY

ACCOUNTING

ɔME: BUS:

SERVICE ADVISOR:

COLOR	YEAR	MAKE/MODEL	VIN	LICENSE	MILEAGE IN/ OUT	TAG
ɪITE	90	LINCOLN TOWN CAR	1LNLM81F5LY		76663/76663	

DEL DATE	PROD. DATE	WARR. EXP.	PROMISED	PO NO.	RATE	PAYMENT	INV. DATE
[redacted]			[redacted]		38.75	CASH	[redacted]

R.O. OPENED	READY	OPTIONS:
[redacted]	[redacted]	

[NE OPCODE TECH TYPE A/HRS S/HRS COST SALE COMP LIST NET TOTAL

A EXHAUST NOISY,REEIMBURSMENT FOR EXHAUST
REPLACEMENT

\AUSE: GOOD WILL REFUND OF 110.00
REFUND GOODWILL WARRANTY

WLM 0.00 0 0 0.00 0.00

ALLOW FORD AD ALLOWANCE

WLM 0.20 7.75 7.75

FC: PART#: COUNT: 0 0 TPARTS
CLAIM TYPE:92M81 AUTH
CODE:D TLABOR
VERSION 1 (EMP# [redacted] 12:25): [redacted] REFUND OF $110.00

ACCOUNT	SALE	COST	CONTROL	ACCOUNT	SALE	COST	CONTROL
						*******	

[redacted]

COST, SALE, & COMP TOTALS 0

SERVICE HOURS

MONDAY - FRIDAY
7:30 A.M. - 6:00 P.M.

PHONE

DESCRIPTION	TOTALS
LABOR AMOUNT	0.00
PARTS AMOUNT	0.00
GAS, OIL, LUBE	0.00
SUBLET AMOUNT	0.00
MISC. CHARGES	0.00
TOTAL CHARGES	0.00
LESS INSURANCE	0.00
SALES TAX	0.00
PLEASE PAY THIS AMOUNT	0.00

STATEMENT OF DISCLAIMER

The factory warranty constitutes all of the warranties with respect to the sale of this item/items. The Seller hereby expressly disclaims all warranties either express or implied, including any implied warranty of merchantability or fitness for a particular purpose. Seller neither assumes nor authorizes any other person to sume for it any liability in connection with the sale of this item/items.

X _____
CUSTOMER SIGNATURE

BEST AVAILABLE COPY

CUSTOMER #

WORKORDER

HOME: BUS:

SERVICE ADVISOR:

COLOR	YEAR	MAKE/MODEL	VIN	LICENSE	MILEAGE IN/ OUT	TAG
WHITE	90	LINCOLN TOWN CAR	1LNLM81F5LY		68311/	

DEL DATE	PROD. DATE	WARR. EXP.	PROMISED	PO NO.	RATE	PAYMENT	INV. DATE
[redacted]			[redacted]		38.75	CASH	

R.O. OPENED	READY	OPTIONS:
[redacted]	[redacted]	

RECOMMENDED SERVICE
CURRENT MILEAGE 68311

01-LUBE OIL AND FILTER

> BASED ON THE CURRENT MILEAGE OF YOUR VEHICLE, THE MANUFACTURER RECOMMENDS <<
>/ THE ABOVE SERVICE BE PERFORMED NOW <<

W - O - R - K - O - R - D - E - R

LINE #	OP CODE	TECH	TYPE	DESCRIPTIONS/INSTRUCTIONS
A	100		CLM	ENGINE, CUST REQUESTS CHECK ENGINE AND DRIVE TRAIN FOR DAMAGE DUE TO ACCIDENT

No damage found to engine or drivetrain

[redacted]

[redacted]

EXCLUSION OF WARRANTIES

Any warranties on the parts and accessories sold hereby are made by the manufacturer. The undersigned purchaser understands and agrees that dealer makes no warranties of any kind, express or implied, and disclaims all warranties, including warranties of merchantability or fitness for a particular purpose, with regard to the parts and/or accessories purchased; and that in no event shall dealer be liable for incidental or consequential damages or commercial losses arising out of such purchase. The undersigned purchaser futher agrees that the warranties excluded by dealer, include, but are not limited to any warranties that such parts and/or accessories are of merchantable quality or that they will enable any vehicle or any of its systems to perform with reasonable safety, efficiency, or comfort.

AUTHORIZATION FOR REPAIRS

I hereby authorize the repair work herein set forth to be done along with the necessary material and agree that you are not responsible for loss or damage to vehicle or articles left in vehicle in case of fire, theft or any other cause beyond your control or for any delays caused by unavailability of parts or delays in parts shipments by the supplier or transporter. I hereby grant you and/or your employees permission to operate the vehicle herein described on streets, highways or elsewhere for the purpose of testing and/or inspection. An express mechanic's lien is hereby acknowledged on above vehicle to secure the amount of repairs thereto. The dealership is not responsible for damages from freezing due to lack of antifreeze.

PRELIMINARY ESTIMATE $ _____

AUTHORIZED BY X

	DATE	TIME	BY
REVISED ESTIMATE (1)			
REVISED ESTIMATE (2)			
REVISED ESTIMATE (3)			

I HEREBY ACKNOWLEDGE THAT I WAS NOTIFIED & GAVE ORAL APPROVAL OF THE ABOVE REVISED ESTIMATES:

X _____
CUSTOMER SIGNATURE

TECHNICIAN COPY

BEST AVAILABLE COPY

Form Approved: O.M.B. No. 2127-0008

US DEPARTMENT of Transportation

National Highway Traffic Safety Administration

Auto Safety Hotline

VEHICLE OWNER'S QUESTIONNAIRE

[redacted]

FOR AGENCY USE ONLY

ID	REFERENCE NO.	DATE RECEIVED	
		[redacted]-93	od_or ___ rt_dt ___ od_rt ___ up_ltr ___

OWNER INFORMATION (TYPE OR PRINT)

NAME and ADDRESS

TELEPHONE NO. (AREA CODE)

Do you authorize NHTSA to provide a copy of this report to the manufacturer of your vehicle? YES ☐ NO ☐
In the absence of an authorization, NHTSA *WILL NOT* provide your name or address to the vehicle manufacturer.

SIGNATURE OF OWNER

DATE

VEHICLE INFORMATION

VEHICLE IDENTIFICATION NO.*	VEHICLE MAKE	VEHICLE MODEL	MODEL YEAR
* LOCATED AT BOTTOM OF WINDSHIELD ON DRIVER'S SIDE	*LINCOLN*	*TOWN CAR*	*1990*

CURRENT ODOMETER READING

DATE PURCHASED _____

☐ NEW ☐ USED

DEALER'S NAME, CITY, & STATE

ENGINE SIZE (CID/CC/L) _____

NO. CYLINDERS _____

☐ TURBO ☐ DIESEL ☐ GAS ☐ FUEL INJECTN

TRANSMISSION TYPE
☐ MANUAL ☐ AUTOMATIC

ANTI LOCK BRAKES
☐ YES ☐ NO

RESTRAINT SYSTEM
☐ DRIVER SIDE AIRBAG ☐ MOTOR BELT
☐ PASSENGER SIDE AIRBAG
☐ 3-POINT BELT ☐ 2-POINT BELT

CRUISE CONTROL
☐ YES ☐ NO

DRIVETRAIN
☐ FRONT ☐ REAR ☐ 4-WHEEL

BODY STYLE
STAWAG _____ HATCH BK _____
4 DR _____ VAN _____
2 DR _____ PK UP TRK _____
OTHER _____

FAILED COMPONENTS(S)/PART(S) INFORMATION (REPORT TIRE INFORMATION ON BACK)

COMPONENT	PART NAME(S)	LOCATION	FAILED PART(S)
12110000		☐ LEFT FRONT ☐ RIGHT REAR	☐ ORIGINAL ☐ REPLACEMENT

NO. OF FAILURES	DATE(S) OF FAILURE(S)	MANUFACTURER CONTACTED	NHTSA PREVIOUSLY CONTACTED
	[redacted]-93	☐ YES ☐ NO	☐ YES ☐ NO
	MILEAGE AT FAILURE(S) *70000*		
	VEHICLE SPEED AT FAILURE(S) *45*		

APPLICABLE ACCIDENT INFORMATION

ACCIDENT	FIRE	NUMBER PERSONS INJURED	NUMBER OF FATALITIES	PROPERTY DAMAGE EST$	POLICE REPORT FILED
YES ☐ Yes ☐ NO	*NO* ☐ YES ☐ NO	*1*	*0*	*YES*	☐ YES ☐ NO

NARRATIVE DESCRIPTION OF FAILURE(S),ACCIDENT(S),INJURY(IES)

DUAL AIRBAGS: DRIVER'S AIRBAG DID NOT DEPLOY UPON IMPACT; PASSENGER'S AIRBAG DEPLOYED; IMPACT 11:00; SPEED VELOCITY 40-45 MPH; ACCIDENT REPORT WILL BE SENT. AK

CONTINUE ON BACK IF NEEDED

The Privacy Act of 1974
Public Law 93-579
This information is requested pursuant to authority vested in the National Highway Traffic Safety Act and subsequent amendments. You are under no obligation to respond to this questionnaire. Your response may be used to assist the NHTSA in determining whether a manufacturer should take appropriate action to correct a safety defect. If the NHTSA proceeds with administrative enforcement or litigation against a manufacturer, your response, or a statistical summary thereof, may be used in support of the agency's action.

BEST AVAILABLE COPY

Form Approved: O.M.B. No. 2127-0008

US DEPARTMENT of Transportation

National Highway Traffic Safety Administration

Auto Safety Hotline

VEHICLE OWNER'S QUESTIONNAIRE

SUPPLEMENTAL ACCIDENT FORM

[redacted]

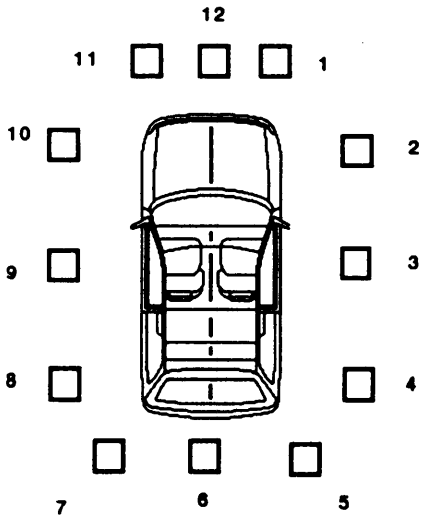
FOR AGENCY USE ONLY

ID	REFERENCE NO.	DATE RECEIVED	
		[redacted]-93	od_or ___ rt_dt ___ od_rt ___ up_ltr ___

ACCIDENT INFORMATION

Location of initial impact (please mark appropriate box)

11:00



1990

LINCOLN

TOWN CAR

Vehicle speed: *45*

Is vehicle equipped with a driver side airbag?

YES

☐ YES ☐ NO ☐ UNKNOWN

Is vehicle equipped with a passenger side airbag?

YES

☐ YES ☐ NO ☐ UNKNOWN

Did driver side airbag deploy?

NO

☐ YES ☐ NO

Did passenger side airbag deploy?

YES

☐ YES ☐ NO

Was the driver wearing a seatbelt?

LAP/SHOULDER

☐ LAP/SHOULDER ☐ LAP ONLY
☐ SHOULDER ONLY ☐ NO

Was the passenger wearing a seatbelt?

LAP/SHOULDER

☐ LAP/SHOULDER ☐ LAP ONLY
☐ SHOULDER ONLY ☐ NOT WEARING
☐ NO PASSENGER

Location of the most severe injury sustained by the driver.

HEAD

☐ NO INJURY SUSTAINED BY DRIVER
☐ HEAD ☐ EYE ☐ NECK
☐ TORSO ☐ ARM/UPPER EXTREMITIES
☐ LEG/LOWER EXTREMITIES

Location of the most severe injury sustained by the passenger.

NECK

☐ NO INJURY SUSTAINED BY PASSENGER
☐ HEAD ☐ EYE ☐ NECK
☐ TORSO ☐ ARM/UPPER EXTREMITIES
☐ LEG/LOWER EXTREMITIES

Type of injury to driver.

TRAUMA

☐ ABRASION ☐ LACERATION ☐ BREAK
☐ BURN ☐ TRAUMA

Type of injury to passenger.

BURN

☐ ABRASION ☐ LACERATION ☐ BREAK
☐ BURN ☐ TRAUMA

Severity of injury to driver.

EMERGENCY ROOM

☐ NO TREATMENT ☐ EMERGENCY ROOM
☐ HOSPITALIZATION ☐ FATAL

Severity of injury to passenger.

EMERGENCY ROOM

☐ NO TREATMENT ☐ EMERGENCY ROOM
☐ HOSPITALIZATION ☐ FATAL

The Privacy Act of 1974
Public Law 93-579

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[redacted] Version 1.03

[redacted] Inc. 1992

Law Enforcement Edition

VIN:1LNLM81F5LY

DIGIT	DESCRIPTION	MEANING
1	Country of Orgin	UNITED STATES
L	Manufacturer	LINC LINCOLN
N	Vehicle Type	LINCOLN PASSENGER CAR
L	Restraint System	AIR BAGS (FNT) & ACT.BELTS (ALL)
M	Line	PASSENGER CAR
81	Body Style	TOWN CAR (BASE) 4 DR SEDAN
F	Engine	5.0L CFI V8 2 BBL
5	Check Digit	CHECK DIGIT VALID
L	Year	1990
Y	Assembly Plant	[redacted] MI
	Sequence Number	IN RANGE

********** VIN Passed Test **********

VIN indicates a 1990 LINCOLN TOWN CAR (BASE) 4 DR SEDAN

(c) [redacted] Inc. 1992

[redacted]

Mr. [redacted]
U.S. Department of Transportation
National Highway Transportation Safety Administration
[redacted]
Washington, D. C. [redacted]

Reference Number:

Mr. [redacted]

I am responding to your request on behalf of my wife, She had talked to you on [redacted] about her accident.

We are concerned as to why the driver's air bag on our car did not deploy upon impact and the passenger's air bag did deploy. finds a great deal of comfort finding a professional that is interested in the fact a product she purchased for it's safety features and placed so much trust in failed at the very time it was designed to function properly. It seems all the 'laymen' we've talked to are positive that something should be done, yet all the 'professionals' (lawyers) want to try and ignore it or play it down. It seems it would take her death to make this incident noticeable.

SOME INFORMATION REGARDING THE AIR BAG SYSTEM. THE TEST WARNING LIGHT FOR THE 'SRS' CAME ON EVERY TIME THE CAR WAS STARTED AND AFTER A COUPLE OF SECONDS IT WOULD GO OUT. TO MY UNDERSTANDING, THE CAR'S DIAGNOSTICS' WAS TELLING US THAT THE "SRS" WAS IN PROPER OPERATING ORDER. WE HAVE NEVER SEEN THE LIGHT COME ON AND STAY ON OR NOT COME ON AT ALL. I CAN ASSURE YOU, THAT PARTICULAR INDICATOR LIGHT WAS OF GREAT INTEREST TO MY WIFE. SHE IS A VERY SAFETY CONSCIOUS INDIVIDUAL.

I want to thank you for responding and your concern. It has taken a great deal of the anxiety and pressure off of She feels more assured that something positive will come of this very unfortunate situation.

I have enclosed the items you requested. If there is any other information that we can provide to you, certainly call us.

Respectfully,

encls: (1) PHOTOS
(2) ACCIDENT REPORT
(3) EMERGENCY ROOM REPORTS
(4) AUTOMOBILE INFORMATION
(5) PREVIOUS REPAIR WORK

MR. [redacted],

I MARKED THE BACK OF THE PHOTOS TO MATCH THE SET I HAVE HERE. EACH PHOTO WAS TAKEN FOR A SPECIFIC REASON, BUT IT MAY NOT BE APPARENT. I WILL CERTAINLY BE AVAILABLE TO ASSIST YOU IN ANY WAY.

(

AUTOMOBILE INFORMATION

VIN: 1LNLM81F5LY[redacted]

MAKE: LINCOLN

MODEL: TOWN CAR (4 DOOR)

YEAR: 1990

SAFETY FEATURES:

1. DRIVER AND PASSENGER AIR BAGS
2. SHOULDER HARNESS/LAP BELT IN FRONT AND BACK SEATS
3. ABS
4. WHITE IN COLOR

BEST AVAILABLE COPY

SHEET NO _____ OF _____ SHEETS

ESTIMATE OF REPAIRS

NAME	ADDRESS	DATE
		[redacted]

Make of Car	Year	Type	License Number	Mileage	Serial No.
Ford	90	Town Car			

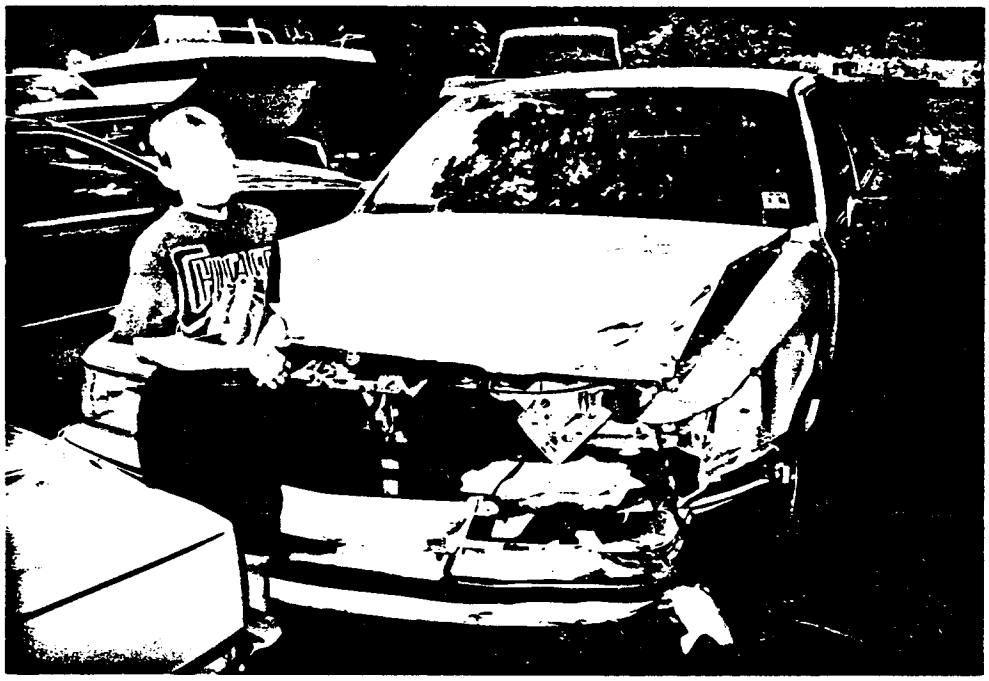
Color	Body Style	Insured By	Phone Home	Work
	4Dr Sedan			

Repair	Replace	DESCRIPTION OF REPAIRS	PARTS	LABOR AMOUNT	PAINT AMOUNT	SUBLET
	✓	left side Marker light assy	72.55	.5		
	✓	Header panel (2.0)	160.33	5.5		
	✓	Left Head light assy	129.85	—		
	✓	Front ~~Face~~ ~~bar~~ center section	350.93	—		
	✓	" Bumper Cover (2.5)	495.27	2.8		
	✓	left Fender & Align (2.8)	—	3.0		
	✓	Hood		1.0		
	✓	left side cover	87.82	—		
	✓	Bully outer	160.45	.8		
		Front end Alignment		1.4		
		Paint & Mat		6.1	85.40	
		Clean Coat		1.0	Incl	
		Lic Plate Holder (Front)	—			
		[redacted] San				

SUB-TOTAL	1,415.93	22.1	85.40
LABOR HOURS	22.1 @ 28.00		618.
SUBLET			
TAX			87.
GRAND TOTAL	2,262.55		

The above is an estimate based on our inspection and does not cover any additional parts or labor which may be required after the work has been opened up. Occasionally after the work has started, worn or damaged parts are discovered which are not evident on the first inspection. Because of this the above prices are not guaranteed, and are for immediate acceptance only.

BEST AVAILABLE COPY



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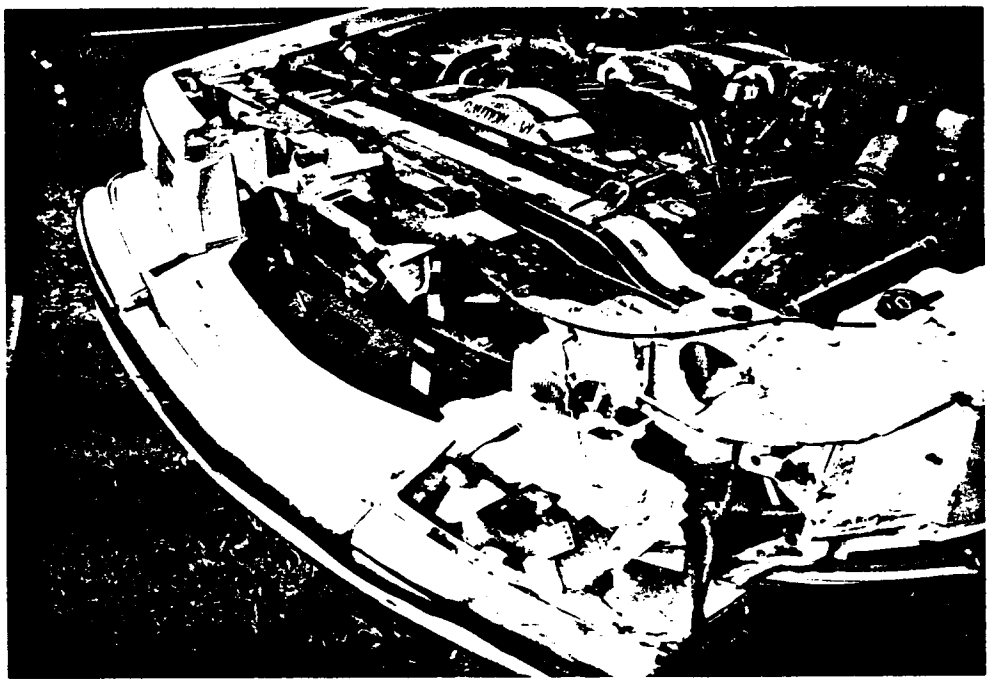

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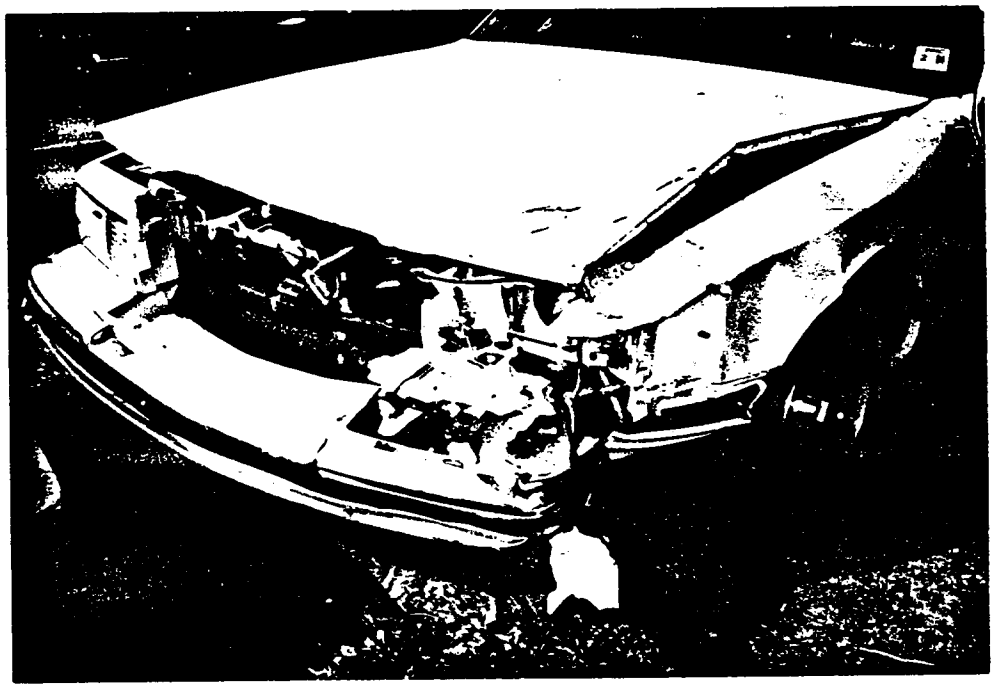

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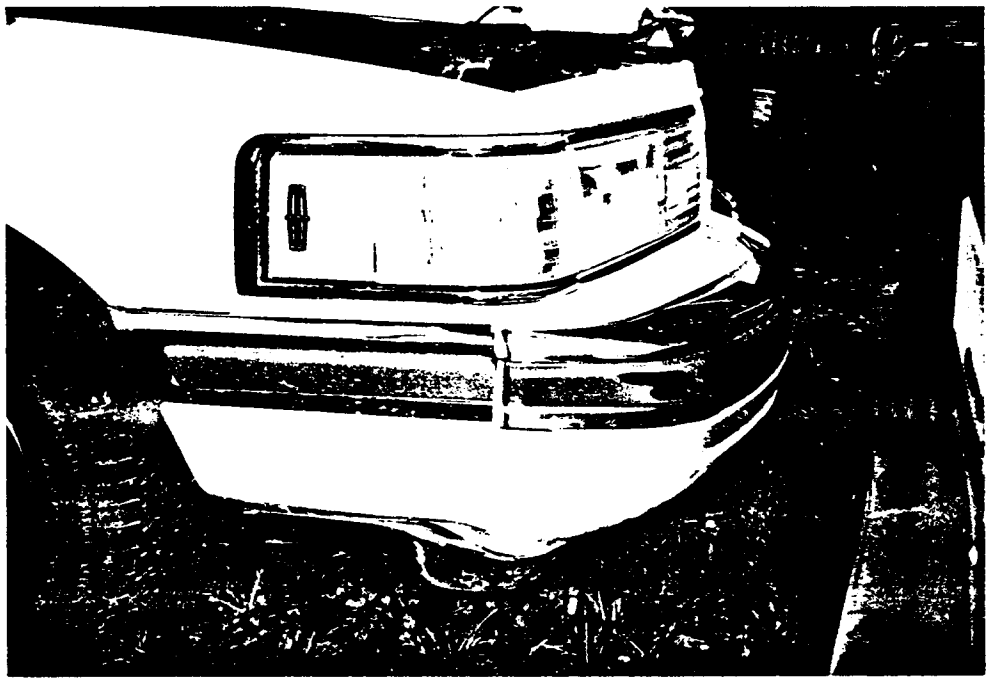

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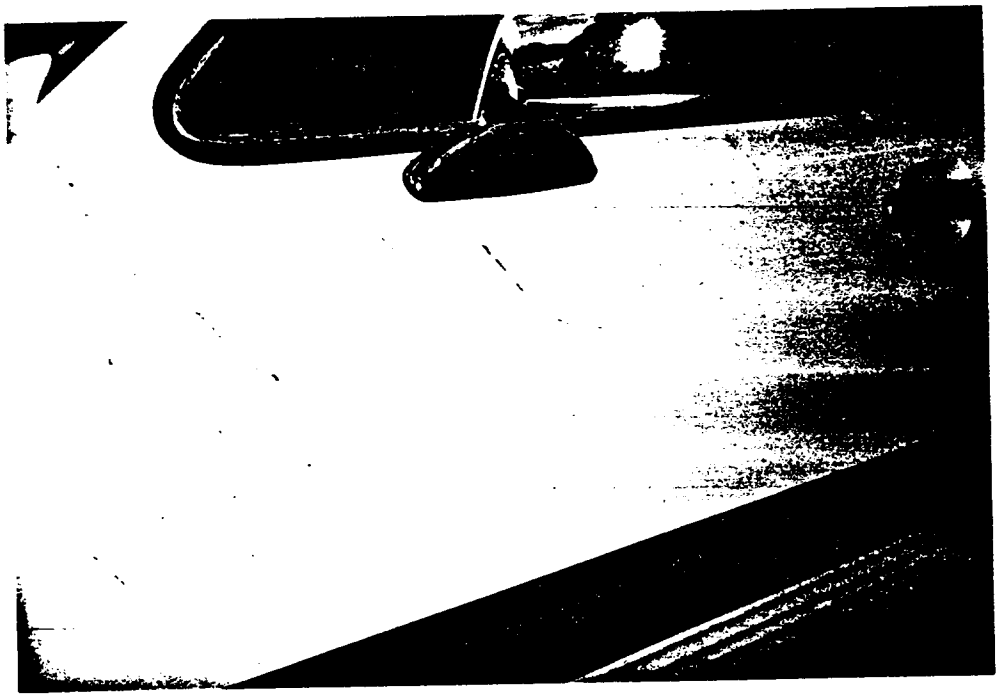

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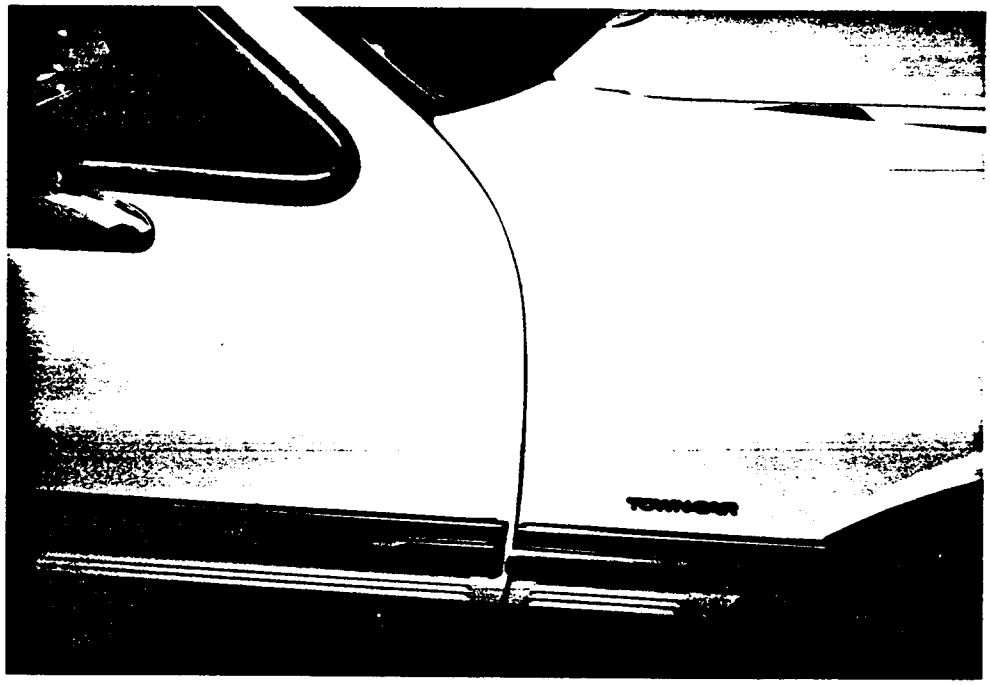

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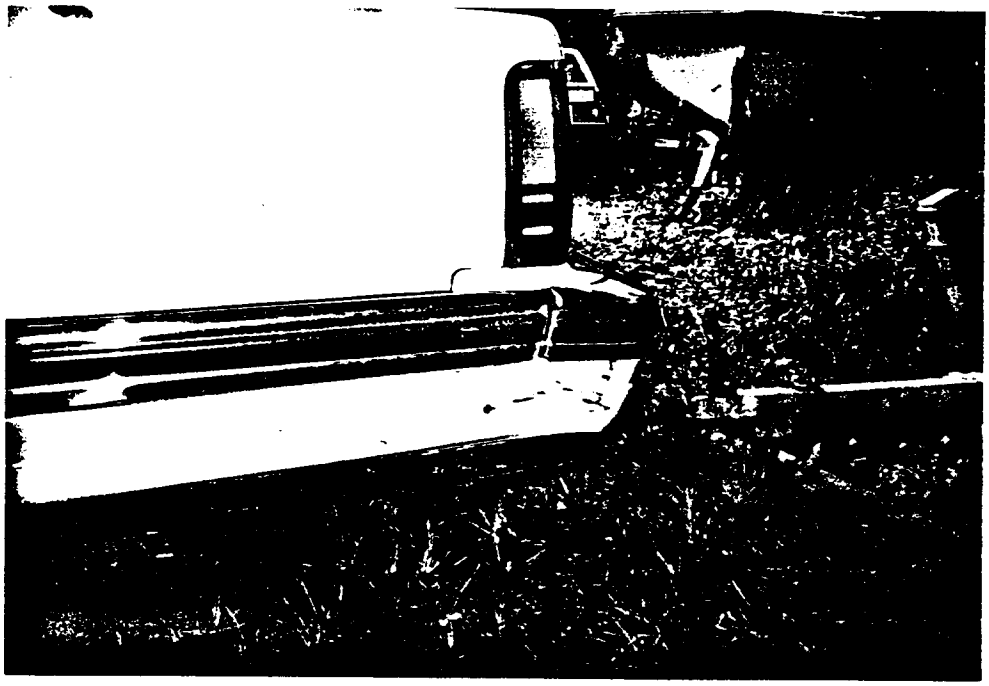

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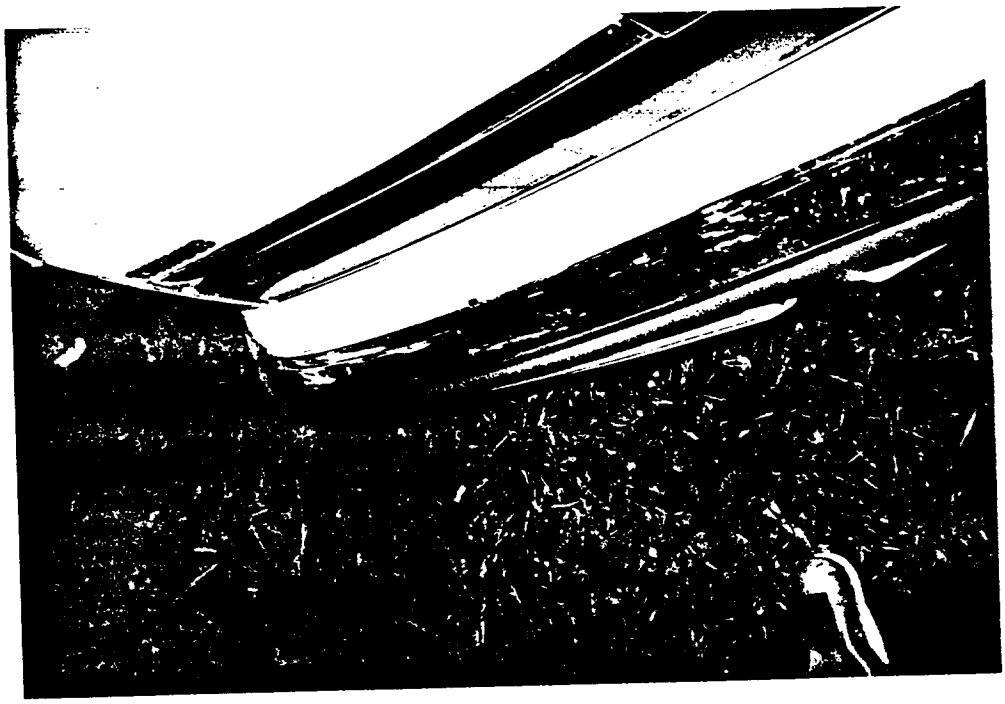

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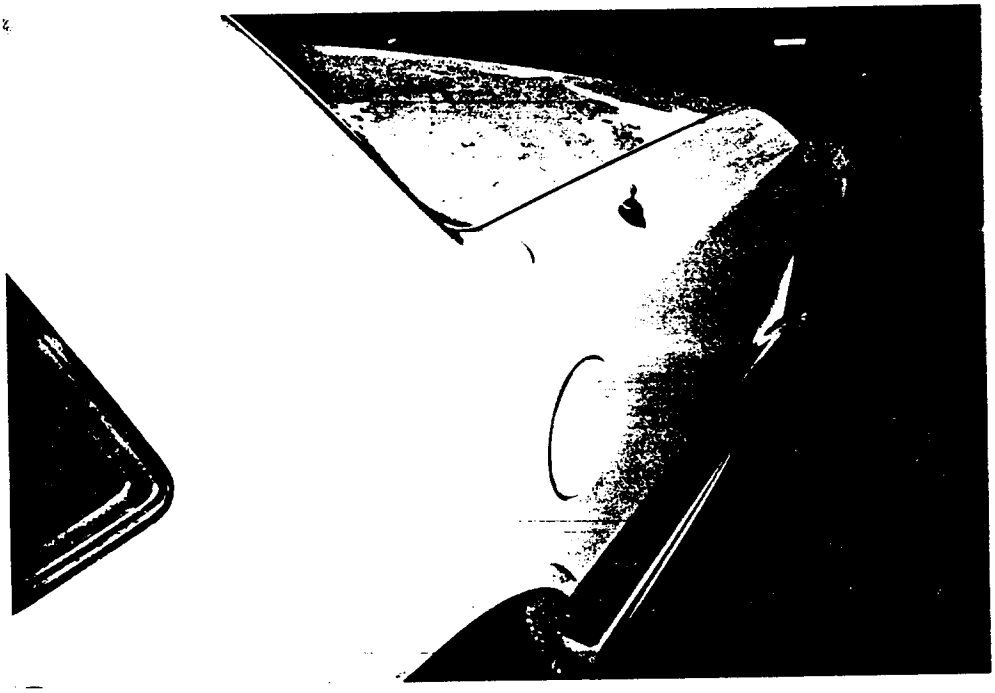

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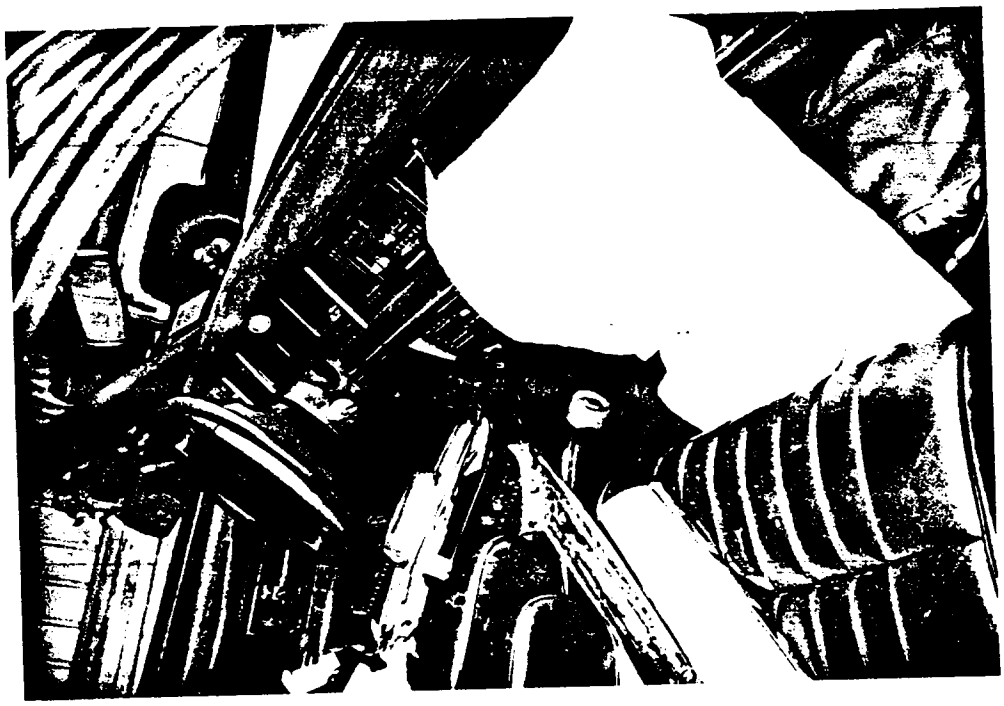

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SECTION 41-58 Restraint System—Supplemental Air Bag

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VEHICLE APPLICATION

Lincoln Town Car, Ford Crown Victoria/Mercury Grand Marquis.

DESCRIPTION

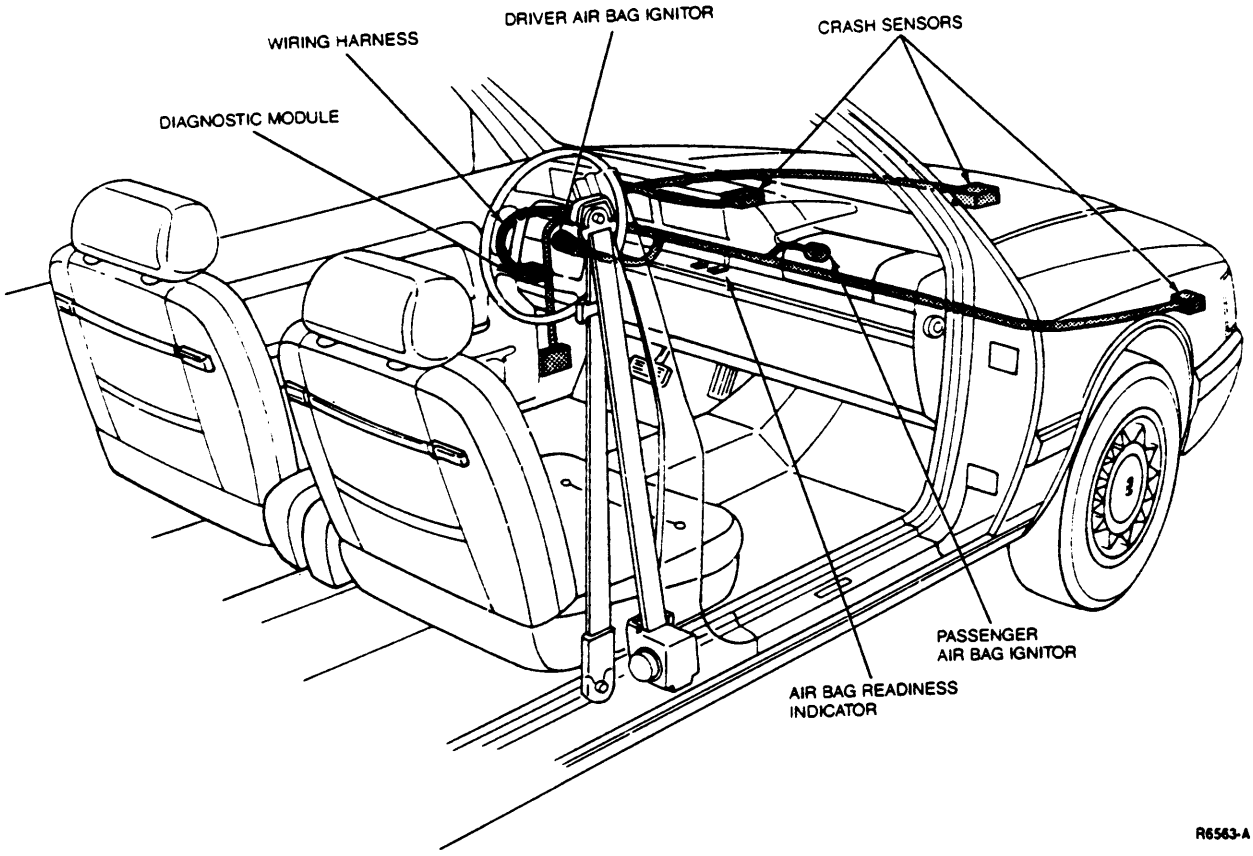
The Supplemental Air Bag Restraint System (SRS) is designed to provide increased accident protection for front seat occupants IN ADDITION TO that provided by the three point safety belt system. Safety belt use is necessary to obtain the best occupant protection and to receive the full advantages of the supplemental air bag. **FORD RECOMMENDS THE USE OF SAFETY BELT SYSTEMS FOR ALL VEHICLE OCCUPANTS.**

Refer to Section 41-50 for information on the Safety Belt Restraint System.

DESCRIPTION (Continued)

The Supplemental Air Bag Restraint System consists of two basic subsystems:

- The driver and passenger air bags.
- The electrical system; including impact sensors, electronic diagnostic monitor and a backup power supply.



Driver Air Bag

The driver air bag is mounted in the center of the steering wheel. The module consists of:

- Inflator.
- Mounting plate and retainer ring.
- Bag assembly.
- Steering wheel trim cover.

NOTE: The driver air bag is serviced as a complete assembly.

Inflator

The inflator assembly is not a serviceable item. When the sensors close, signalling a crash, battery power flows to the air bag inflator. Inside the inflator, an igniter converts the electrical signal to thermal (heat) energy, causing the ignition of the inflator gas generant. This ignition reaction combusts the sodium azide/copper oxide gas generant in the inflator, producing nitrogen gas, which inflates the air bag.

Driver Air Bag

The air bag is constructed of neoprene coated nylon, is 28 inches in diameter and fills to a volume of about 2.3 cubic feet in approximately 40 milliseconds. It is not a serviceable item.

Mounting Plate and Retainer Ring

The mounting plate and retainer ring attach and seal the bag assembly to the inflator. The mounting plate is also used to attach the trim cover and to mount the entire module to the wheel. These items are components of the air bag module and cannot be serviced.

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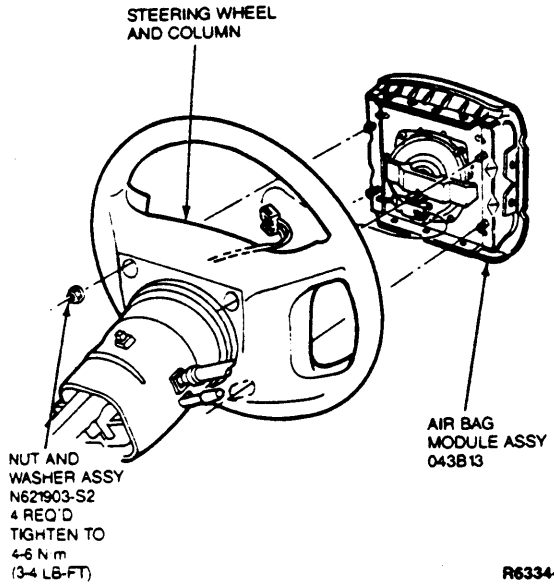
DESCRIPTION (Continued)

Steering Wheel Trim Cover

When the air bag is activated, tear seams moulded into the steering wheel trim cover separate to allow inflation of the bag. The cover is a component of the air bag module and is not serviceable.

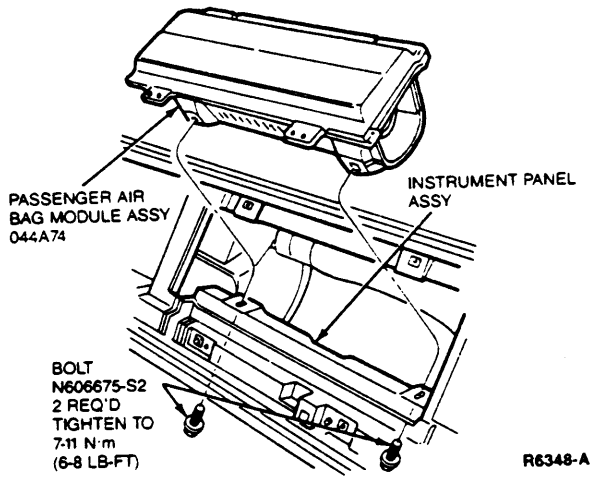


Reaction Housing

The steel housing supplies support for the inflator, a reaction surface for the air bag, and is used to attach the trim cover. It contains mounting brackets that attach the air bag to the instrument panel, and is not a serviceable item.

Trim Cover

The thermo-plastic trim cover is textured and painted to match the surface of the instrument panel. It is constructed with a moulded-in tear seam that separates when the air bag inflates, and hinges out of the way during deployment. Its main function is to retain the air bag in the reaction housing during vehicle operation, and is not a serviceable item.



Passenger Air Bag

Lincoln Town Car

The passenger air bag is mounted in the RH position of the instrument panel above the glove compartment. The Air Bag consists of the following components:

- Inflator.
- Reaction housing with mounting hardware.
- Bag assembly.
- Trim cover.

NOTE: The passenger air bag is serviced as a complete assembly.

Inflator

The passenger air bag inflator is not a serviceable item. As with the driver air bag, an igniter inside the inflator converts to battery power to thermal (heat) energy, causing ignition of the gas generant. The ignition reaction causes combustion of the sodium ozide/iron oxide gas generant producing nitrogen to fill the bag. Since the passenger air bag is much larger than the driver air bag, it contains more gas generant in a different inflator configuration to produce more nitrogen gas.

Passenger Air Bag Assembly

The passenger air bag is constructed of ripstop nylon. The bag fills to a volume of approximately 8 cubic feet. It is not a serviceable item.

Diagnostic Monitor

The diagnostic monitor contains a microcomputer that monitors the electrical system components and connections. The monitor performs a self-check of the microcomputer internal circuits and energizes the system readiness indicator lamp during prove out and whenever a fault occurs. System electrical faults can be detected and translated into different coded lamp displays. If certain faults occur, the system will be disarmed by a firing disarm device built into the monitor. If a system fault exists and the lamp is malfunctioning, an audible tone will be heard indicating the need for service.

System Readiness Indicator Lamp

The system readiness indicator, located in the left pad of the electronic instrument cluster will light for approximately six seconds whenever the ignition switch is turned from OFF to RUN if the air bag is working properly. If air bag system faults are found, the lamp will either fail to light, stay on continuously, or light in a flashing mode (if a system fault exists and the lamp is malfunctioning an audible tone will be heard indicating the need for service). If a fault occurs after the prove out the lamp will light either continuously or in a coded flashing mode.

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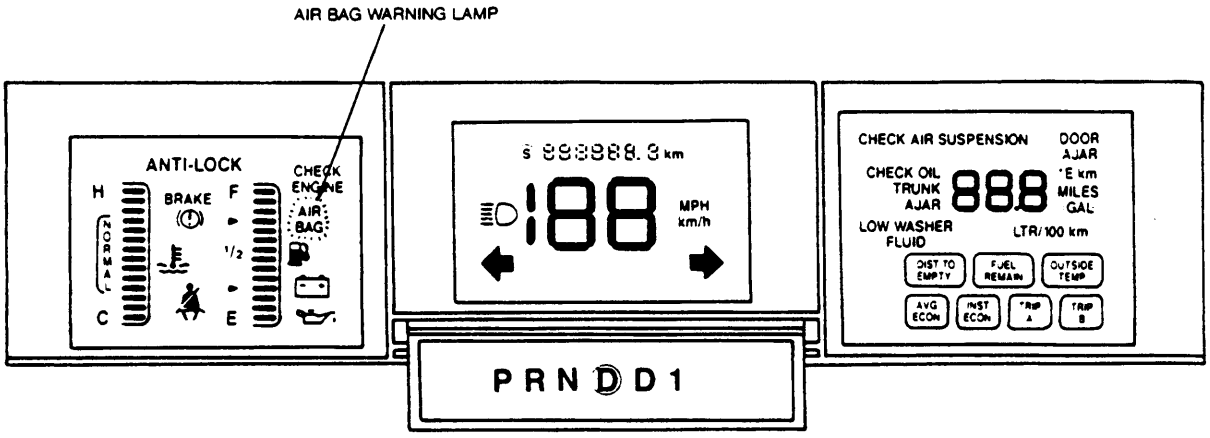
DESCRIPTION (Continued)

Tone Generator

The air bag readiness lamp is the prime means of determining the air bag system condition. However, a series of five sets of five tones will be heard if the readiness lamp is out and a fault occurs in the system. This also means that the Supplemental Air Bag System is in need of service. The tone pattern will repeat periodically until the fault and lamp outage are serviced. Unless serviced, the Supplemental Air Bag Restraint System may not function properly in the event of an accident.

Lincoln Town Car



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Electrical System

The air bag system is powered directly from the battery. The system can function with the ignition switch in any position, including OFF and LOCK. The system can also function when the driver or passenger seats are unoccupied. The electrical system performs three main functions:

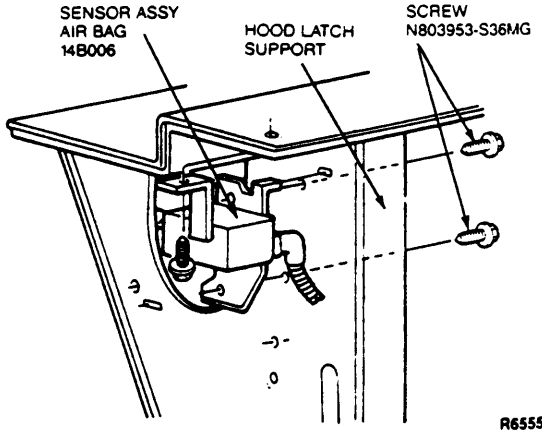
- Detects an impact.
- Switches electric power to the air bags.
- Monitors the system to determine readiness.

The electrical system components include:

- Diagnostic monitor.
- Air bag system readiness indicator.
- Wiring harness.
- Sensors.
- The igniter within the driver and passenger air bags.
- Backup power supply.

Sensors

The sensor is an electrical switch which reacts to impacts according to direction and force. It discriminates between impacts that require air bag inflation and impacts that do not require air bag inflation. When an impact occurs that requires air bag inflation, the sensor contacts close, completing the electrical circuit necessary for system operation.



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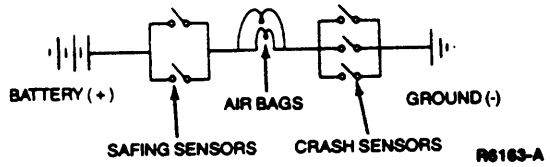
DESCRIPTION (Continued)

Five sensors are mounted in the vehicle. Their locations are as follows:

- A dual crash and safing sensor at the hood latch support.
- A crash sensor at the RH fender apron.
- A crash sensor at the LH fender apron.
- A safing sensor at the LH cowl side in the passenger compartment.

At least two sensors, one safing, one front, must be activated to inflate the air bag.

AIR BAG FIRING CIRCUIT DIAGRAM



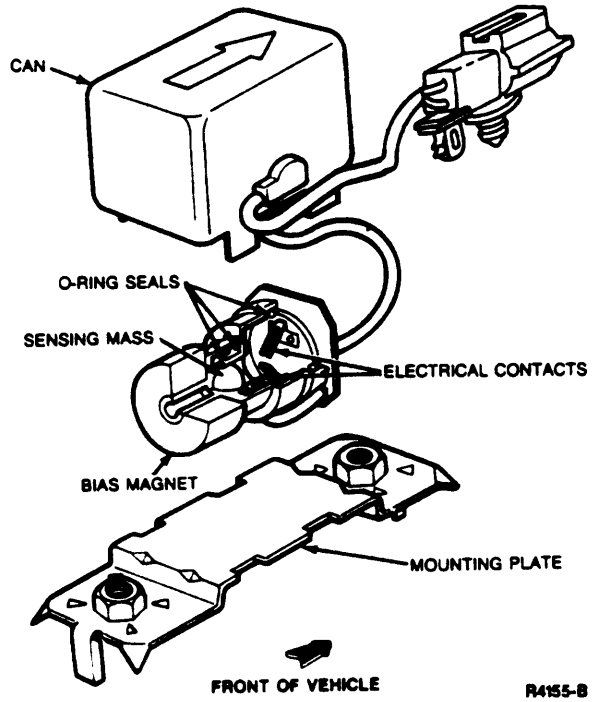
Backup Power Supply

A backup power supply is included in the system to provide air bag deployment if the battery or battery cables are damaged in an accident before the crash sensors close. The power supply is a capacitor that will discharge approximately 15 minutes after the battery is disconnected. It is located in the instrument panel and is combined with the diagnostic monitor.

WARNING: THE BACKUP POWER SUPPLY MUST BE DISCONNECTED BEFORE ANY AIR BAG COMPONENT SERVICE IS PERFORMED.

Igniter Assembly

Refer to Air Bag Module for description



PARTS REPLACEMENT

The various major assemblies in the air bag system have been designed to be tamper-resistant and are not intended to be disassembled for service. Component assemblies may be removed and replaced as required. Information on proper handling, storage, and disposal of the air bag inflator assemblies is provided in this Section. Refer to Removal and Installation. Warning labels for the air bag are shown.

Repair of Air Bag Equipped Vehicles Involved in Accidents

While repairing an air bag equipped vehicle that has been involved in an accident, check sensors and wiring.

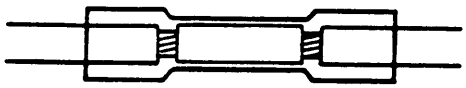
Vehicle sensor orientation is critical for proper system operation. If a vehicle equipped with an air bag system is involved in a crash where the fenders or grille area have been damaged, inspect the sensor mounting brackets for damage. If damaged, the sensor should be replaced whether or not the air bag is deployed. In addition, ensure that body structure in the area of the sensor mounting is restored to its original condition.

Inspect the sensor wiring and the wiring harness for any damage that may have occurred due to the accident. Repair or replace any damaged wiring, terminals, insulation or connectors as required. If splices are required in adjacent wiring, the splices should be staggered 50mm (2 inches) from each other. Repair as follows:

A waterproof butt splice connector should be used on all wiring repairs in the engine compartment. A heat shrink nylon splice prevents water, salt, condensation and heat from affecting the wiring repair.

The inner wall of the splice connector is lined with an adhesive that melts when heated with a heat gun and flows under pressure from the tubing, sealing the splice. The connectors can be crimped with a standard insulated connector crimping tool. The splices are color coded for gauge identification, and are transparent to allow inspection of the finished splice.

INSTALLATION INSTRUCTIONS



1. STRIP WIRES 7.6mm (0.3") INSERT INTO CRIMP BARREL

2. CRIMP USING CRIMP TOOL FOR PREINSULATED CRIMPS.

3. HEAT SPLICE WITH HEAT GUN UNTIL TUBING SHRINKS AND ADHESIVE FLOWS FROM EACH END.

R6719-A

Part Number	Part Name	Class
E6FZ-14488-A	Butt Connector Gauge: 18-22, Color: Red	C
E6FZ-14488-B	Butt Connector Gauge: 14-16, Color: Blue	C
E6FZ-14488-C	Butt Connector Gauge: 10-12, Color: Yellow	C

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If the accident involved air bag deployment, the steering column may have been loaded sufficiently to deform steering column mounting brackets or damage column wiring.

An inspection should be made of the column structure and clockspring wiring to ensure that any damaged components are replaced. Refer to Section 13-04.

After all service, **verify the air bag lamp.** This means turn the ignition switch to RUN and count the flashes only after the code (series of flashes) has cycled twice. If the air bag lamp comes on continuously for 4 to 8 seconds and then goes out, the system is functioning properly and all faults have been replaced. Refer to Diagnosis and Testing.

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PARTS REPLACEMENT (Continued)

ON DRIVER AIR BAG

WARNING

This restraint module cannot be repaired. Use Ford published diagnostic instructions to determine if the unit is defective. If defective, replace and dispose of the entire unit as directed in instructions. Under no circumstances should diagnosis be performed using electrically powered test equipment or probing devices. Tampering or mishandling can result in personal injury. For special handling instructions, refer to the Ford Air Bag Shop Manual.

AVERTISSEMENT

On ne reparer ce dispositif de securite. Des directives de diagnostic publiees par Ford vous permettront de determiner si le dispositif est defectueux/S'il est defectueux, le remplacer et suivre les directives de mise au rebut du dispositif complet. On ne doit en aucun cas tester ce dispositif a l'aide d'appareils electriques ou de sondes. Toute alteration ou manipulation indue pourrait causer des blessures. Le manuel technique Ford sur les coussins de securite donne des instructions speciales de manutention.

ON PASSENGER AIR BAG

Ford AIR BAG INFORMATION

Air Bag System is normal if "AIR BAG" lamp lights briefly when ignition key is turned on.

NO MAINTENANCE IS NEEDED unless:

1. "AIR BAG" lamp does not light when key is turned on
2. "AIR BAG" lamp flashes or stays lit
3. Groups of five "beeps" are heard
4. An air bag has inflated

USE SEAT BELTS EVEN IF YOU HAVE AN AIR BAG.

SEE OWNER GUIDE FOR MORE INFORMATION ABOUT AIR BAGS

FOAB-54060B-AA

Ford COUSSIN DE SECURITE

Le dispositif du coussin de sécurité est en bon état si le témoin marqué «AIR BAG» s'allume momentanément quand le commutateur d'allumage est en position de contact.

AUCUNE INTERVENTION NE S'IMPOSE sauf si:

1. Le témoin «AIR BAG» ne s'allume pas quand le commutateur d'allumage est en position de contact
2. Le témoin «AIR BAG» clignote ou reste allumé
3. Des successions de cinq «bips» se font entendre.
4. Un coussin de sécurité s'est déployé (gonflé).

BOUCLEZ VOTRE CEINTURE MEME SI VOUS BENEFICIEZ D'UN COUSSIN DE SECURITE.

LE GUIDE DU PROPRIETAIRE VOUS DONNE DE PLUS AMPLES RENSEIGNEMENTS SUR LES COUSSINS DE SECURITE.

ON GLOVE BOX DOOR

WARNING

DO NOT TAMPER WITH OR DISCONNECT THE AIR BAG SYSTEM WIRING. You could inflate the bag(s) or make it inoperative which may result in injury. See Shop Manual.

ADVERTISSEMENT

NE PAS MANIPULER NI DEBRANCHER LE CABLAGE ELECTRIQUE DU DISPOSITIF D'UN COUSSIN DE SECURITE. Cela pourrait gonfler le coussin de sécurité ou le mettre hors service et entraîner des blessures. Voir le manuel de réparation.

E0DR-54000N-AA

ON HOOD LATCH SUPPORT

This vehicle has a DRIVER AIR BAG. If the letters "SRS" are above the glove box, it also has a FRONT PASSENGER AIR BAG.

SEAT BELTS MUST STILL BE USED:

- For effective protection in all types of accidents
- To reduce risk of injury from an inflating air bag in an accident

FOR CHILD SEATS IN VEHICLES WITH A PASSENGER AIR BAG:

- Forward facing—move passenger seat as far from dash as possible
- Rear facing—use only in rear seat

See Owner Guide

Ce véhicule comporte un COUSSIN DE SÉCURITÉ Pour le CONDUCTEUR. Si les lettres "SRS" figurent au-dessus de la boîte à gants, il possede également un COUSSIN DE SÉCURITÉ pour le PASSAGER AVANT.

IL FAUT CONTINUER À UTILISER LES CEINTURES DE SÉCURITÉ:

- Pour une protection efficace lors de tout accident
- Pour réduire les risques de blessures causées par le déploiment du coussin de sécurité lors d'un accident

SIÈGES POUR ENFANTS DANS LES VÉHICLES COMPORTANT UN COUSSIN DE SÉCURITÉ POUR LE PASSAGER AVANT:

- Siège vers l'avant. Reculer le siège passager avant le plus loin possible vers l'arrière.
- Siège vers l'arrière. n'utiliser que sur la banquette arrière.

Voir le Guide du propriétaire FOAB-54042C70-AB

ON BACK OF VISORS

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SERVICE PRECAUTIONS

WARNING: SAFE HANDLING OF AIR BAGS REQUIRE FOLLOWING THE PROCEDURES DESCRIBED BELOW FOR BOTH LIVE AND DEPLOYED AIR BAGS.

ALWAYS WEAR SAFETY GLASSES WHEN SERVICING AN AIR BAG VEHICLE, AND WHEN HANDLING AN AIR BAG.

Live Air Bags

WHEN CARRYING A LIVE AIR BAG, MAKE SURE THE BAG AND TRIM COVER ARE POINTED AWAY FROM YOUR BODY. IN THE UNLIKELY EVENT OF AN ACCIDENTAL DEPLOYMENT, THE BAG WILL THEN DEPLOY WITH MINIMAL CHANCE OF INJURY. IN ADDITION, WHEN PLACING A LIVE AIR BAG ON A BENCH OR OTHER SURFACE, ALWAYS FACE THE BAG AND TRIM COVER UP, AWAY FROM THE SURFACE. THIS WILL REDUCE THE MOTION OF THE AIR BAG IF IT IS ACCIDENTALLY DEPLOYED.

Deployed Air Bags

SAFETY PRECAUTIONS MUST ALSO BE OBSERVED WHEN HANDLING A DEPLOYED AIR BAG. AFTER DEPLOYMENT, THE AIR BAG SURFACE MAY CONTAIN DEPOSITS OF SODIUM HYDROXIDE, A PRODUCE OF THE GAS GENERANT COMBUSTION THAT IS IRRITATING TO THE SKIN. ALWAYS WEAR GLOVES AND SAFETY GLASSES WHEN HANDLING A DEPLOYED AIR BAG, AND WASH YOUR HANDS WITH MILD SOAP AND WATER AFTERWARDS.

General Instructions

BECAUSE OF THE CRITICAL OPERATING REQUIREMENTS OF THE SYSTEM, DO NOT ATTEMPT TO SERVICE SENSORS, THE CLOCKSPRING, THE MONITOR, THE BACKUP POWER SUPPLY OR THE AIR BAG. CORRECTIONS ARE MADE BY REPLACEMENT ONLY.

NOTE: IF A PART IS REPLACED AND THE NEW PART DOES NOT CORRECT THE PROBLEM, INSTALL THE ORIGINAL PART AND PERFORM THE DIAGNOSTIC PROCEDURE AGAIN.

NEVER PROBE THE CONNECTORS ON THE AIR BAGS. DOING SO MAY RESULT IN AIR BAG DEPLOYMENT WHICH COULD RESULT IN PERSONAL INJURY.

ALL COMPONENT REPLACEMENTS AND WIRING REPAIRS MUST BE MADE WITH THE BATTERY GROUND AND THE BACKUP POWER SUPPLY DISCONNECTED.

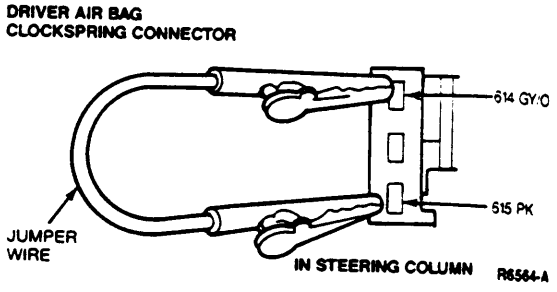
THE INSTRUCTION "DISCONNECT" ALWAYS REFERS TO A CONNECTOR. NEVER DETACH A COMPONENT FROM THE VEHICLE WHEN INSTRUCTED TO "DISCONNECT."

VEHICLE SENSOR ORIENTATION IS CRITICAL FOR PROPER SYSTEM OPERATION. IF A VEHICLE EQUIPPED WITH AN AIR BAG SYSTEM IS INVOLVED IN A CRASH WHERE THE FENDERS OR GRILLE AREA HAVE BEEN DAMAGED, INSPECT THE SENSOR MOUNTING BRACKETS FOR DEFORMATION. IF DAMAGED, THE SENSOR SHOULD BE REPLACED WHETHER OR NOT THE AIR BAG IS DEPLOYED. IN ADDITION, ENSURE THAT BODY STRUCTURE IN THE AREA OF SENSOR MOUNTING IS RESTORED TO ITS ORIGINAL CONSTRUCTION.

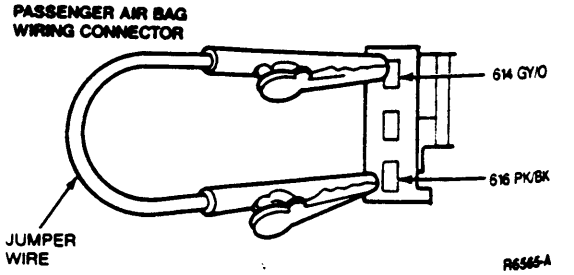
To Deactivate System:

NOTE: Follow Steps 1,2,3,4 and 8 for driver air bags. For passenger air bag (Lincoln Town Car) follow Steps 1,5,6,7 and 8.

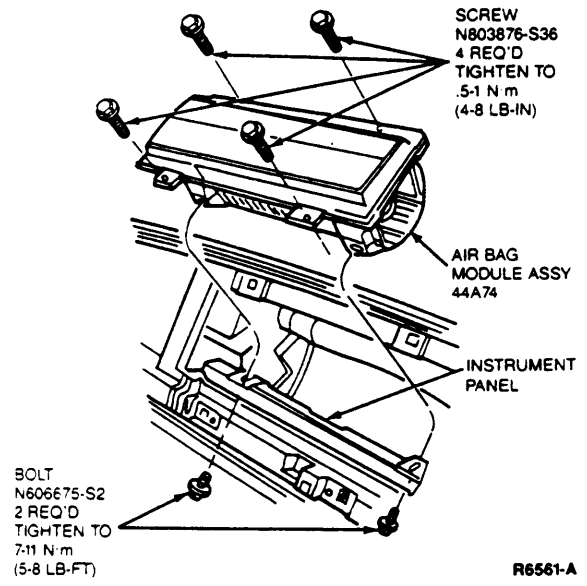
1. Disconnect battery ground cable and backup power supply.
2. Remove four nut and washer assemblies securing driver air bag module to steering wheel.
3. Disconnect driver air bag module connector.
4. Attach jumper wire to air bag terminals on clockspring assembly.



5. Open glove compartment and rotate all the way down, past the stops.
6. Disconnect passenger air bag connector (Lincoln Town Car).
7. Attach jumper wire to air bag terminals on the wiring harness side.



SERVICE PRECAUTIONS (Continued)



8. Connect backup power supply and battery ground cable.

To Reactivate System:

1. Disconnect battery ground cable and backup power supply.
2. Remove jumper wire from air bag terminals on clockspring assembly, if connected.
3. Reconnect driver air bag connector.
4. Position driver air bag on steering wheel and secure with four nut and washer assemblies (10mm). Tighten nut and washer assemblies to 4-6 N·m (35-53 lb-in).
5. Remove jumper wire from air bag terminals on passenger air bag wiring connector in harness (Lincoln Town Car).
6. Reconnect passenger air bag connector (Lincoln Town Car).
7. Close glove compartment door (Lincoln Town Car).
8. Connect backup power supply and battery ground cable.
9. Verify air bag lamp.

REMOVAL AND INSTALLATION

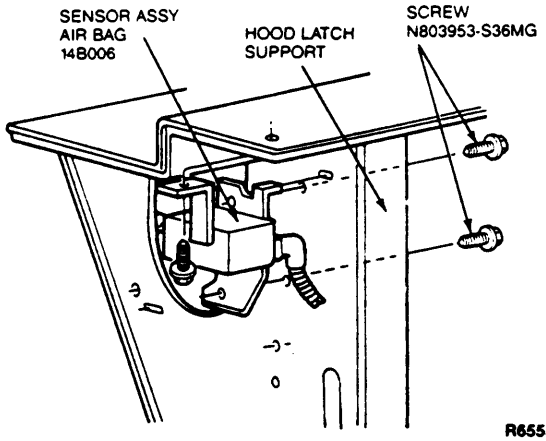
Sensor—Front Center

Removal

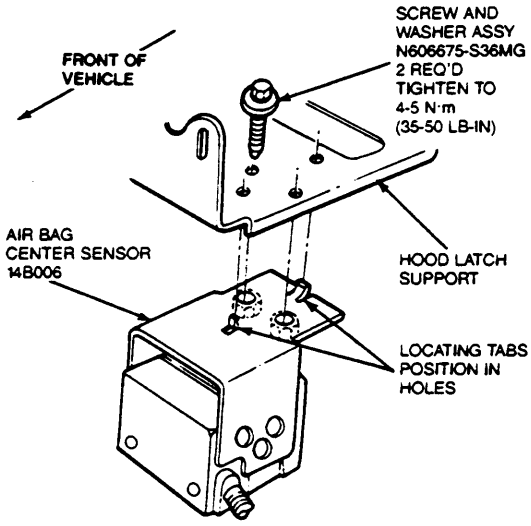
WARNING: THE ELECTRICAL CIRCUIT NECESSARY FOR SYSTEM DEPLOYMENT IS POWERED DIRECTLY FROM THE BATTERY AND BACKUP POWER SUPPLY. TO AVOID ACCIDENTAL DEPLOYMENT AND POSSIBLE PERSONAL INJURY, THE BATTERY GROUND CABLE AND BACKUP POWER SUPPLY MUST BE DISCONNECTED PRIOR TO SERVICING OR REPLACING ANY SYSTEM COMPONENTS.

1. Disconnect battery ground cable and backup power supply.
2. Disconnect center front sensor electrical connector and wiring retainer.
3. Remove screws attaching front sensor to radiator support. Remove sensor from vehicle.

Lincoln Town Car



Ford Crown Victoria/Mercury Grand Marquis



Installation

1. Position front center sensor with arrow on top pointing toward front of vehicle and secure to radiator support with retaining screws. Tighten vertical retaining screw (two on Ford Crown Victoria/Mercury Grand Marquis) to 4-5 N·m (35-50 lb-in), and horizontal retaining screws (Lincoln Town Car) to 4-6 N·m (39-53 lb-in).

REMOVAL AND INSTALLATION (Continued)

2. Connect front center sensor wire lead connector to wiring assembly connector and install wiring retainer.
3. Connect backup power supply and battery ground cable.
4. Verify air bag indicator lamp.

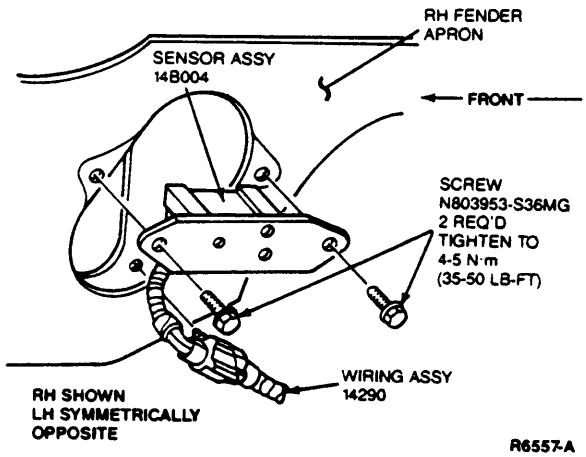
Sensor—RH Front

Removal

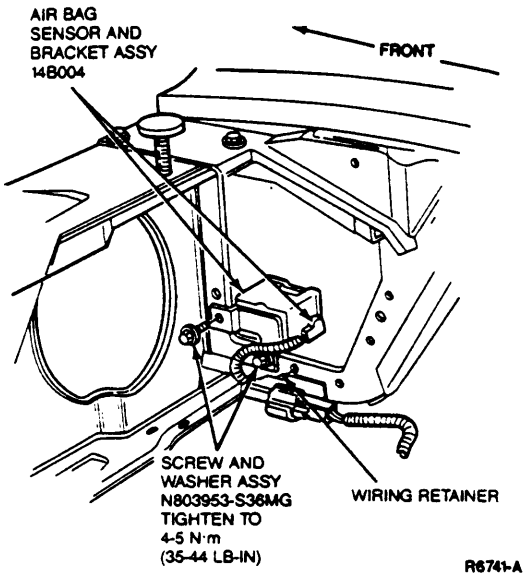
WARNING: THE ELECTRICAL CIRCUIT NECESSARY FOR SYSTEM DEPLOYMENT IS POWERED DIRECTLY FROM THE BATTERY AND BACKUP POWER SUPPLY. TO AVOID ACCIDENTAL DEPLOYMENT AND POSSIBLE PERSONAL INJURY, THE BATTERY GROUND CABLE AND BACKUP POWER SUPPLY MUST BE DISCONNECTED PRIOR TO SERVICING OR REPLACING ANY SYSTEM COMPONENTS.

1. Disconnect battery ground cable and backup power supply.
2. Remove battery.
3. Disconnect RH front sensor electrical connector and wiring retainer.
4. Remove two screws retaining RH front sensor to RH fender apron and remove sensor.

Lincoln Town Car



Ford Crown Victoria/Mercury Grand Marquis



Installation

1. Position RH front sensor and wire lead in vehicle and secure sensor to RH fender apron with retaining screws. Tighten screws to 4-5 N·m (35-44 lb-in).
2. Connect RH front sensor wire lead connector to wiring assembly connector and secure wiring retainer.
3. Install battery.
4. Connect backup power supply and battery ground cable.
5. Verify air bag indicator lamp.

Sensor—LH Front

Removal

WARNING: THE ELECTRICAL CIRCUIT NECESSARY FOR SYSTEM DEPLOYMENT IS POWERED DIRECTLY FROM THE BATTERY AND BACKUP POWER SUPPLY. TO AVOID ACCIDENTAL DEPLOYMENT AND POSSIBLE PERSONAL INJURY, THE BATTERY GROUND CABLE AND BACKUP POWER SUPPLY MUST BE DISCONNECTED PRIOR TO SERVICING OR REPLACING ANY SYSTEM COMPONENTS.

1. Disconnect battery ground cable and backup power supply.
2. Remove washer fluid reservoir.
3. Disconnect LH front sensor electrical connector and wiring retainer.
4. Remove screws retaining LH front sensor to LH fender apron and remove sensor from vehicle.

REMOVAL AND INSTALLATION (Continued)

Installation

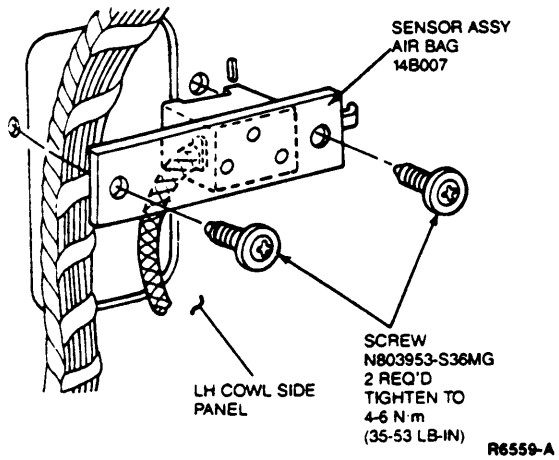
1. Position LH sensor to LH fender apron and secure with retaining screws. Tighten screws to 4-5 N·m (35-44 lb-in).
2. Connect LH front sensor electrical wiring connector to wiring assembly connector and secure wiring retainer.
3. Install washer fluid reservoir.
4. Connect backup power supply and battery ground cable.
5. Verify air bag indicator lamp.

Sensor—Rear

Removal

WARNING: THE ELECTRICAL CIRCUIT NECESSARY FOR SYSTEM DEPLOYMENT IS POWERED DIRECTLY FROM THE BATTERY AND BACKUP POWER SUPPLY. TO AVOID ACCIDENTAL DEPLOYMENT AND POSSIBLE PERSONAL INJURY, THE BATTERY GROUND CABLE AND BACKUP POWER SUPPLY MUST BE DISCONNECTED PRIOR TO SERVICING OR REPLACING ANY SYSTEM COMPONENTS.

1. Disconnect battery ground cable and backup power supply.
2. Remove LH cowl side trim panel. Refer to Section 45-03.
3. Remove connector bracket.
4. Disconnect rear sensor wiring connector from wiring assembly connector.
5. Remove two screws attaching rear sensor to LH cowl side panel and remove sensor.



Installation

1. Position sensor to cowl side panel.
2. Secure sensor with two screws. Tighten to 4-6 N·m (35-53 lb-in).
3. Connect rear sensor wiring connector to wiring assembly connector.
4. Install connector bracket.
5. Install cowl side trim panel.
6. Connect backup power supply and battery ground cable.
7. Verify air bag indicator lamp.

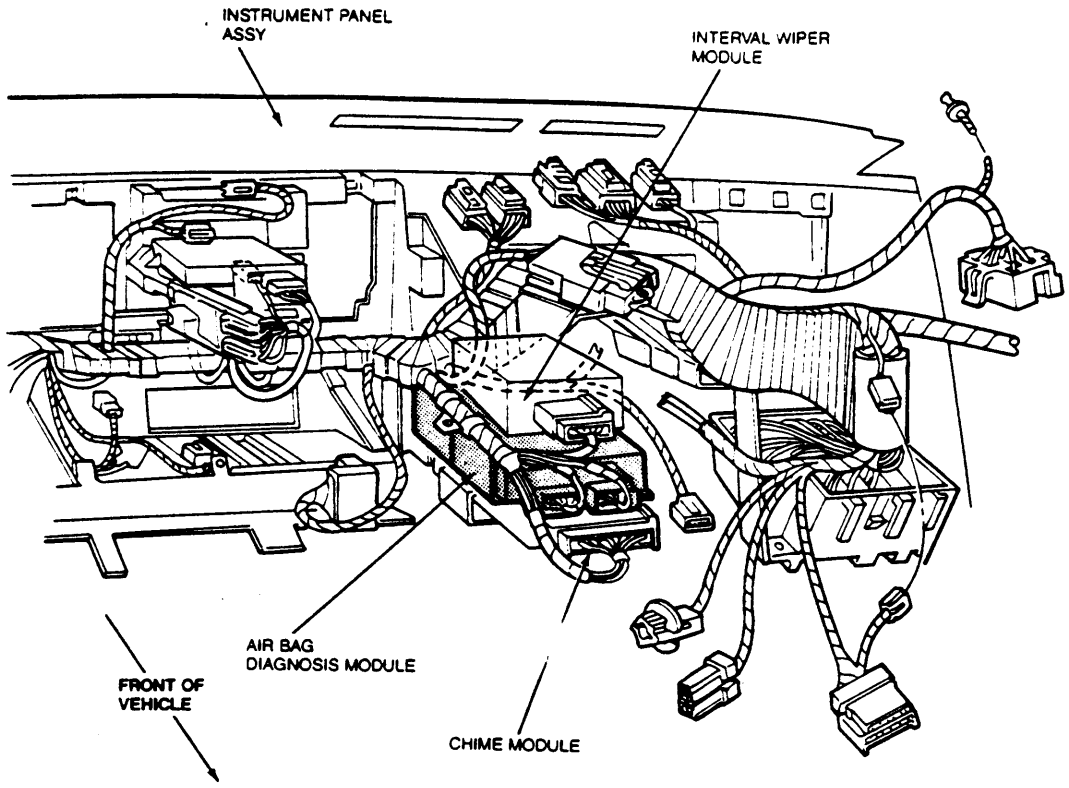
Diagnostic Monitor

Removal

WARNING: THE ELECTRICAL CIRCUIT NECESSARY FOR SYSTEM DEPLOYMENT IS POWERED DIRECTLY FROM THE BATTERY AND BACKUP POWER SUPPLY. TO AVOID ACCIDENTAL DEPLOYMENT AND POSSIBLE PERSONAL INJURY, THE BATTERY GROUND CABLE AND BACKUP POWER SUPPLY MUST BE DISCONNECTED PRIOR TO SERVICING OR REPLACING ANY SYSTEM COMPONENTS.

1. Disconnect battery ground cable and backup power supply.
2. Remove headlamp switch knob and retaining nut.
3. Remove LH and RH instrument panel mouldings.
4. Remove 12 upper and lower instrument panel finish panel retaining screws and finish panel.
5. Remove two bolts attaching steering column opening cover and pad assembly to instrument panel and remove cover.
6. Remove two screws and pushpin retaining instrument panel insulator and remove insulator.
7. Disconnect diagnostic monitor electrical wiring connectors.
8. Remove two screws attaching diagnostic monitor and bracket assembly and remove assembly.
9. Remove screws attaching monitor to bracket.

REMOVAL AND INSTALLATION (Continued)



Installation

1. Position diagnostic monitor to bracket and install retaining screws.
2. Position diagnostic monitor and bracket assembly on instrument panel and install retaining screws.
3. Connect electrical wiring connectors to the diagnostic monitor and backup power supply.
4. Position insulator assembly on instrument panel and install two screws and push rivet. Tighten screws to 1.5-3 N·m (13-27 lb-in).
5. Position steering column opening cover and pad assembly on instrument panel. Install five retaining screws. Tighten to 9-14 N·m (6-10 lb-ft).
6. Install instrument panel finish panel and retaining screws.
7. Install instrument panel mouldings.
8. Install headlamp switch, retaining nut and knob.
9. Connect battery ground cable.
10. Verify air bag indicator lamp.

Backup Power Supply

Removal

WARNING: THE ELECTRICAL CIRCUIT NECESSARY FOR SYSTEM DEPLOYMENT IS POWERED DIRECTLY FROM THE BATTERY AND BACKUP POWER SUPPLY. TO AVOID ACCIDENTAL DEPLOYMENT AND POSSIBLE PERSONAL INJURY, THE BATTERY GROUND CABLE AND BACKUP POWER SUPPLY MUST BE DISCONNECTED PRIOR TO SERVICING OR REPLACING ANY SYSTEM COMPONENTS.

1. Disconnect battery ground cable and backup power supply.
2. Remove headlamp switch knob and retaining nut.
3. Remove LH and RH instrument panel mouldings.
4. Remove 12 upper and lower instrument panel finish panel retaining screws and finish panel.
5. Remove two bolts attaching steering column opening cover and pad assembly to instrument panel and remove cover.

REMOVAL AND INSTALLATION (Continued)

6. Remove two screws and pushpin retaining instrument panel insulator and remove insulator.
7. Disconnect diagnostic monitor backup power supply electrical wiring connector, mounted to the EEC module bracket.
8. Remove screws attaching EEC module bracket assembly and remove assembly.
9. Remove power supply by depressing retaining tabs to bracket.

Installation

1. Position power supply to bracket and install.
2. Position bracket assembly on instrument panel and install retaining screws.
3. Connect electrical wiring connectors to the power supply.
4. Position insulator assembly on instrument panel and install two screws and push rivet. Tighten screws to 1.5-3 N·m (13-27 lb-in).
5. Position steering column opening cover and pad assembly on instrument panel. Install five retaining screws. Tighten to 9-14 N·m (6-10 lb-ft).
6. Install instrument panel finish panel and retaining screws.
7. Install instrument panel mouldings.
8. Install headlamp switch, retaining nut and knob.
9. Connect battery ground cable.
10. Verify air bag indicator lamp.

Air Bag Clockspring

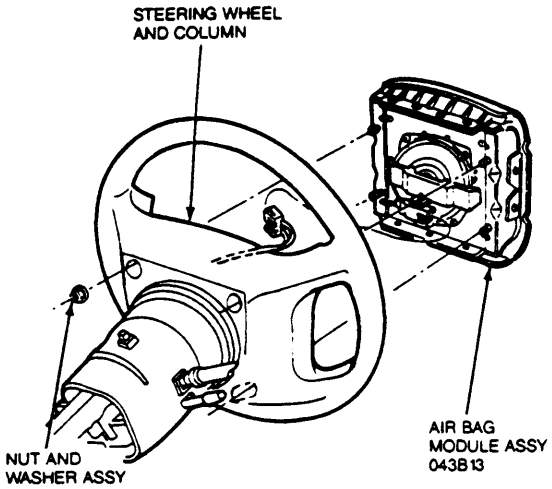
Refer to Section 13-04.

Driver Air Bag

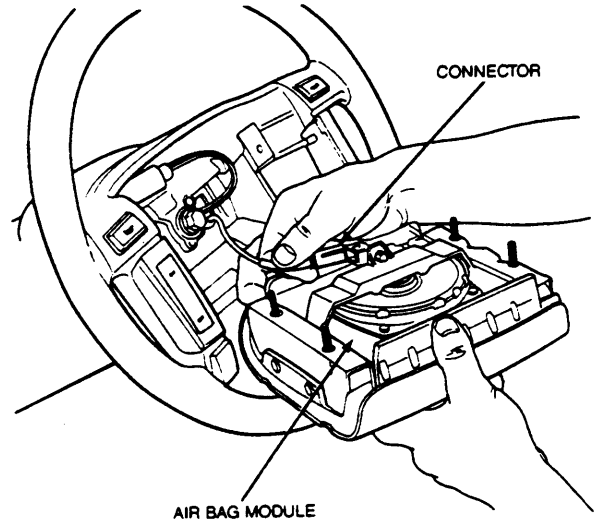
Removal

WARNING: THE ELECTRICAL CIRCUIT NECESSARY FOR SYSTEM DEPLOYMENT IS POWERED DIRECTLY FROM THE BATTERY AND BACKUP POWER SUPPLY. TO AVOID ACCIDENTAL DEPLOYMENT AND POSSIBLE PERSONAL INJURY, THE BATTERY GROUND CABLE AND BACKUP POWER SUPPLY MUST BE DISCONNECTED PRIOR TO SERVICING OR REPLACING ANY SYSTEM COMPONENTS.

1. Disconnect battery ground cable and backup power supply.
2. Remove four nut and washer assemblies retaining air bag module to steering wheel.



3. Disconnect the air bag electrical connector from clockspring connector. Remove air bag assembly.



WARNING: PLACE AIR BAG MODULE ON BENCH WITH TRIM COVER FACING UP.

Installation

1. Connect air bag module wiring connector to clockspring connector.
2. Position air bag module to steering wheel and secure with four nut and washer assemblies. Tighten to 4-6 N·m (35-53 lb-in).
3. Connect backup power supply and battery ground cable.
4. Verify air bag indicator lamp.

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REMOVAL AND INSTALLATION (Continued)

Passenger Air Bag

Lincoln Town Car

Removal

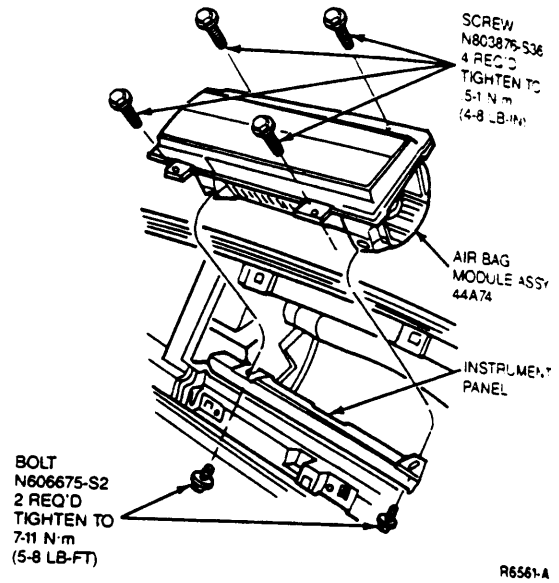
WARNING: THE ELECTRICAL CIRCUIT NECESSARY FOR SYSTEM DEPLOYMENT IS POWERED DIRECTLY FROM THE BATTERY AND BACKUP POWER SUPPLY. TO AVOID ACCIDENTAL DEPLOYMENT AND POSSIBLE PERSONAL INJURY, THE BATTERY GROUND CABLE AND BACKUP POWER SUPPLY MUST BE DISCONNECTED PRIOR TO SERVICING OR REPLACING ANY SYSTEM COMPONENTS.

1. Disconnect battery ground cable and backup power supply.
2. Remove RH instrument panel.
3. Remove instrument panel finish panel retaining screws and remove panel.
4. Open glove compartment, press sides inward and lower glove compartment to floor.
5. Through glove compartment opening, remove two air bag module retaining screws.
6. Remove four remaining air bag module retaining screws, disconnect electrical connector and remove module.

   WARNING: PLACE AIR BAG MODULE ON BENCH WITH TRIM COVER FACING UP.

Installation

1. Connect electrical connector to air bag module and position module in instrument panel.
2. Install four upper retaining screws. Tighten to 0.5-1.0 N·m (4-8 lb-in).
3. Install lower module retaining bolts. Tighten to 7-11 N·m (6-8 lb-ft).
4. Return glove compartment to correct position.
5. Install instrument panel finish panel with 12 retaining screws. Tighten upper screws to 9-14 N·m (6-10 lb-ft). Tighten lower screws to 2-4 N·m (17-35 lb-in).
6. Install instrument panel mouldings.
7. Connect backup power supply and negative battery terminal.
8. Verify air bag indicator lamp.



Trim Panel and Steering Column Opening

Removal and Installation

Refer to Section 13-04.

DISPOSAL PROCEDURES

Several situations may arise when some form of disposal action must be undertaken, scrapping a vehicle containing a deployed air bag; scrapping a vehicle with a live air bag, disposal of a live but electrically inoperative air bag module, and scrapping a deployed module. These situations and the disposal recommendations are shown in the following chart and discussed in detail below.

AIR BAG DISPOSAL RECOMMENDATIONS

Condition	Instructions
1. Vehicle to be Scrapped; Live Air Bags.	Electrically Deploy Using Procedures 1 or 2 as Required.
2. Vehicle to be Scrapped; Deployed Air Bags.	Scrap Vehicle in the Usual Manner.
3. Module to be Replaced; Damaged but Live Air Bags.	Package and Label Property. Return to Ford.
Module to be Replaced; Deployed Air Bags.	Scrap Air Bags in the Usual Manner.

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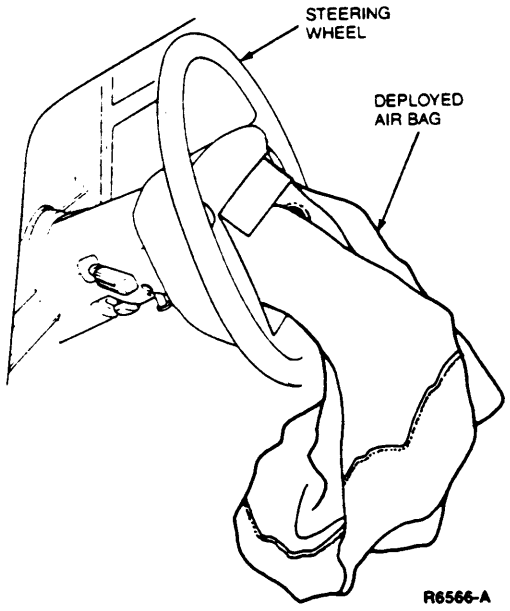
DISPOSAL PROCEDURES (Continued)

Deployed Air Bags

To service a vehicle in which the air bags have deployed, the deployed driver air bags must be replaced with all new air bags. The deployed air bags can be disposed of in the same manner as any part to be scrapped.



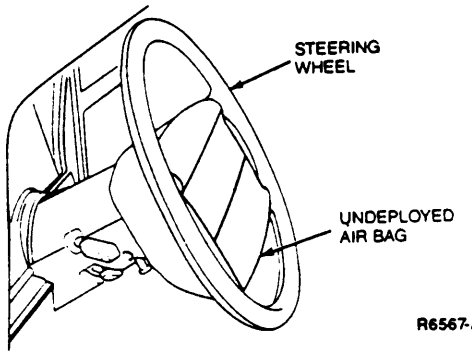
Undeployed Air Bag—Inoperative

In the event that an air bag is diagnosed as inoperative, (refer to Diagnostic Procedures), the inoperative air bag must be replaced by a new air bag. The inoperative air bag **CANNOT BE DISPOSED OF IN THE USUAL MANNER,** and must be returned to Ford Motor Company for proper disposal.

Air bags must be packaged and shipped according to the U.S. Department of Transportation regulations. Retain packaging used for replacement air bags, including the labeling. Return air bags according to the instructions provided with replacement air bags.

Scrapped Vehicle

Some vehicles may be damaged or inoperable to the point that service cannot be made, but still contain undeployed air bags. This condition could occur by side or rear impact, or rollover, or if the vehicle is simply past its useful lifetime. **THE AIR BAGS SHOULD BE DEPLOYED PRIOR TO VEHICLE SCRAPPAGE, PER PROCEDURES 1 OR 2 BELOW.**



Air Bag Disposal

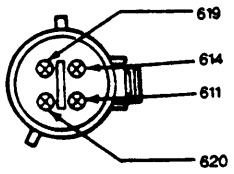
Procedure 1

Electronic Deployment with Intact Wiring

This procedure is to be used in the event that a vehicle with a live air bag is to be scrapped. Scrappage may be required due to severe damage in a non-air bag deployable accident, or at the end of the vehicle's useful life. This procedure assumes that the air bag wiring remains intact; that is, no fault codes are indicated by the readiness indicator, that the system proves out correctly, and that the vehicle's battery is still in place (or one has been provided). This procedure is to be performed outdoors away from other personnel, since the deploying air bags make a loud report upon actuation.

1. Check and clear the front seat of all loose objects.
2. Do not permit any occupants to remain inside the vehicle.
3. Open the hood and check for an operational vehicle battery. If no battery is found, supply one and connect it in the usual manner.
4. Turn the ignition switch to the RUN position and observe the air bag readiness indicator. If the lamp illuminates for six seconds and then stops, the system is intact and may be deployed. Continue with Procedure 1. If a series of fault codes appears, go to Procedure 2 to deploy the unit.
5. Locate the center air bag sensor at the hood latch support. Locate the connector on the wiring from the sensor.
6. Pull the submersible connector apart and examine the wiring harness end of the connector (not the sensor end). Identify circuits 619 PK/W, 620 P/LB, 611 W/O and 614 GY/O.

Center Air Bag Sensor Connector



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DISPOSAL PROCEDURES (Continued)

7. Using a 152mm (6 inch) length of bared wire, short the 619 PK/W wire to ground. Again, ensuring there are no occupants in the vehicle, short the 611 W/O and 614 GY/O circuits together with a second bared wire. The air bags should deploy. If the air bags do not deploy, go to Procedure 2.
8. If successful, a loud report will be heard and the bag material will be visible in the center of the steering wheel and above the glove compartment. Allow at least 10 minutes before approaching the air bag to allow for cooling, and dissipation of the effluents.

The air bag(s) is now inoperative and the vehicle may be scrapped in the usual manner.

Procedure 2

Remote Deployment of Air Bags

This procedure is to be used in the event that a vehicle with live air bags is to be scrapped, but the vehicle does not contain an intact wiring harness or certain system components are inoperative. This procedure can also be used if Step 7 of Procedure 1 was unsuccessful.

WARNING: REMOTE DEPLOYMENT IS TO BE PERFORMED OUTDOORS WITH ALL PERSONNEL AT LEAST 20 FEET AWAY TO ENSURE PERSONNEL SAFETY AND DUE TO THE LOUD REPORT WHICH OCCURS WHEN DRIVER AIR BAGS ARE DEPLOYED.

1. Remove the driver and passenger air bags from the vehicle as outlined.
2. Cut the two module connector wires and strip 25mm (1 inch) of insulation from the ends. Obtain two wires at least 20 feet long. Connect one end of each wire to each of the air bag module wires.
3. Place the air bag with the trim cover facing upward on a flat surface in a remote area such as a parking lot or field.

   WARNING: DO NOT PLACE THE AIR BAG WITH THE TRIM COVER FACING DOWN, AS THE FORCES OF THE DEPLOYING AIR BAG MAY CAUSE IT TO RICOCHET AND CAUSE PERSONAL INJURY.
4. Remaining at least 20 feet away from the air bag, deploy it by touching the other ends of the two wires to the terminals of a 12 volt vehicle batter

›ud report will be heard and the
vill be visible. Allow at least 10
›proaching the air bag to allow
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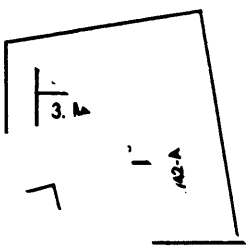


DIAGNOSIS AND TESTING

The diagnostic monitor has a coded flashing indicator lamp feature which assists in isolating system malfunctions or faults. The codes are produced by a series of air bag lamp flashes. Each flash is on for about one-half second and off for about one-half second. The number of flashes in each series is based on the type of fault being detected. The code (series of flashes) is repeated when the ignition switch is in the RUN position and a fault exists. The coded fault feature is prioritized so that if two or more different faults occur at the same time, the highest priority fault indication will be shown until corrected.

NOTE: If a system fault exists and the lamp is malfunctioning, an audible tone will be heard indicating the need for service. The tone produced is a series of five sets of five beeps. The number of beeps does not indicate the fault code; it means the lamp is out and a fault is present.

The faults and associated codes are listed in the Fault Code Priorities chart in the order that they are ranked from top to bottom. In other words, the code at the top of the list has the highest priority (or ranking) and would be shown over any other code by the air bag lamp. The code at the bottom of the list has the lowest priority (or ranking). These listings are for information only and should not be used for system diagnosis or troubleshooting. The following diagnostic charts and deactivation procedure should be used to pinpoint the specific fault and to safely diagnose and service the system. However, if after using the diagnostic charts, the fault is not located, proceed to the diagnostic schematic to perform additional diagnostic checks to determine and correct uncommon faults.

"Check Connection" means inspect connector for proper seating to mating connector, inspect terminals for good contact and inspect wiring for proper crimping to terminal.

All continuity checking is done with the system deactivated. This means that the air bags are disconnected and jumper wires are installed.

"Disconnect" does not mean removal.

A disconnected part is not reconnected until specific reconnect instruction is given.

The following test equipment is used:

- Dwell-Tach-Volt-Ohms Tester Rotunda 059-00010 or equivalent.
- Jumper Wires.

NOTE: Attach positive (+) lead to circuit voltage and negative (-) lead to specified ground. (If a Digital Voltmeter is used on circuits 608 and 609 with monitor disconnected, the readout will not indicate the correct voltage).

DIAGNOSIS AND TESTING (Continued)

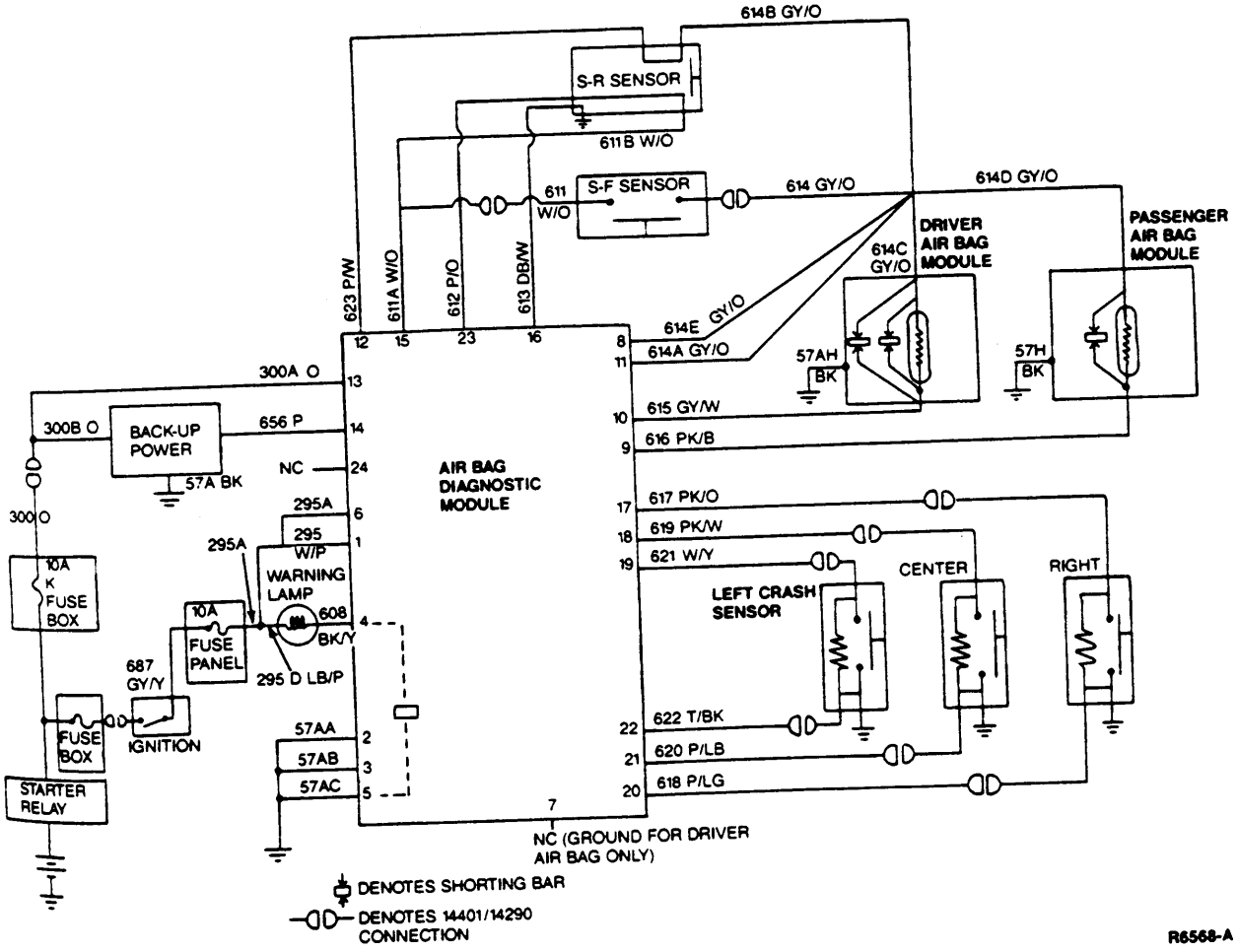
All resistance checks must be made with the negative lead of the ohmmeter at vehicle ground, not battery ground, unless specifically directed otherwise. Three places are recommended; the metal bracket of starter relay, the ignition lock cylinder on the steering column, or the ground wire from harness under RH side of instrument panel.

Refer to the Fault Code Priorities Chart, the System Schematic, Connector Illustration and the Diagnosis Charts for Diagnosis and Testing.

VERIFY AIR BAG LAMP means to turn the ignition switch to RUN and count the flashes only after the code (series of flashes) has cycled twice. If the air bag lamp comes on continuously for four to eight seconds and then goes out, the system is functioning properly and all faults have been serviced.

NOTE: The following Diagnosis and Testing applies to Lincoln Town Car vehicles. Diagnosis and Testing for Ford Crown Victoria/Mercury Grand Marquis vehicles follows Diagnosis and Testing for Lincoln Town Car.

Air Bag System Schematic
Lincoln Town Car



DIAGNOSIS AND TESTING (Continued)

FAULT CODE PRIORITIES

Number of Flashes	Probable Fault
No Lamp	Inoperative air bag indicator lamp circuit
Continuous Lamp	Faulty monitor or disconnected or loose monitors
3	Loss of air bag deployment circuit power. Backup power supply disconnected
5	Shorted forward impact sensor deployment circuit or potential short in air bag deployment circuit
10	Faulty firing circuit disarm device
4	Potential short in air bag deployment circuit. Must use Diagnosis Guide No. 4 for diagnosis
6	Driver air bag circuit inoperative
7	Passenger air bag circuit inoperative
8	Forward impact sensor improperly attached or grounded
9	Open forward impact sensor deployment circuit
2	All forward impact sensors disconnect

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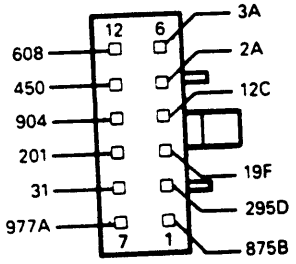
DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Does Not Light
Probable Fault — Inoperative Air Bag Lamp Circuit

TEST STEP		RESULT ▶	ACTION TO TAKE
A0	DURING SYSTEM PROVE-OUT AIR BAG INDICATOR LAMP DID NOT LIGHT		
A1	CHECK WARNING LAMPS		
	• Turn ignition switch from OFF to RUN. • Warning lamps should light. • Do Engine and Safety Belt warning lamps light?	Yes ▶ No ▶	GO to **A6**. GO to **A2**.
A2	CHECK FUSE		
	• Turn ignition switch to OFF. • Check warning lamps fuse. • Is fuse blown?	Yes ▶ No ▶	GO to **A3**. GO to **A4**.
A3	REPLACE FUSE		
	• Install new fuse into fuse panel. • Turn ignition switch to RUN. • Did fuse blow again?	No ▶ Yes ▶	VERIFY Engine Safety Belt and Air Bag warning lamps. TURN ignition switch to OFF. DEACTIVATE air bag system. TRACE Circuit 295 (LB/P) from IP shelf moulding connector to fuse panel, to find short to ground and SERVICE. REACTIVATE system and VERIFY warning lamps.
A4	RECHECK WARNING LAMPS		
	• Remove cluster connector, then reconnect connector. • Turn ignition switch from OFF to RUN. • Verify Engine and Safety Belt warning lamps. • Do Engine and Safety Belt warning lamps light?	No ▶ Yes ▶	GO to **A5**. VERIFY Engine, Safety Belt and Air Bag warning lamps.

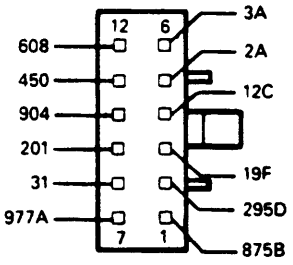
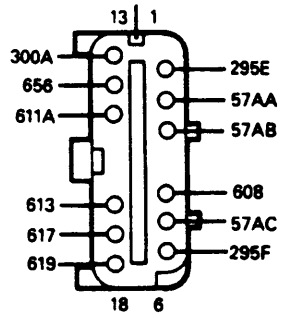
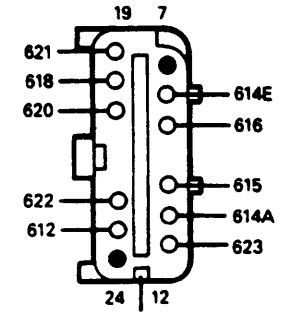


CLUSTER CONNECTOR

CR6962-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Does Not Light
Probable Fault — Inoperative Air Bag Lamp Circuit

TEST STEP		RESULT	ACTION TO TAKE
A5	CHECK CIRCUIT 640 (R/Y) FOR OPEN CIRCUIT		
• Turn ignition switch to OFF. • Deactivate air bag system. • Remove warning lamps fuse. • Attach ohmmeter to Circuit 295 (LB/P) at fuse panel and instrument panel cluster connector. • Is resistance less than 1 ohm?  CLUSTER CONNECTOR		Yes ▶ No ▶	REPLACE cluster as required. REACTIVATE system and VERIFY warning lamps. TRACE Circuit 295 (LB/P) from cluster connector to fuse panel to find open in circuit, and REPAIR. REACTIVATE air bag system and VERIFY warning lamps.
A6	CHECK THAT MONITOR CONNECTOR IS PROPERLY CONNECTED		
DIAGNOSTIC MONITOR CONNECTOR (GRAY)  DIAGNOSTIC MONITOR CONNECTOR (BLACK)  		Yes ▶ No ▶	GO to **A7**. Properly connect diagnostic monitor connectors. VERIFY Air Bag lamp. If Air Bag lamp does not light GO to **A8**.

CR6743-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Does Not Light
Probable Fault — Inoperative Air Bag Lamp Circuit

TEST STEP	RESULT ▶	ACTION TO TAKE
A7 CHECK LAMP WITH MONITOR CONNECTOR DISCONNECTED		
• Turn ignition switch to OFF. • Disconnect diagnostic monitor wiring from monitor assembly. • Turn ignition to RUN. • Is the Air Bag lamp lit continuously?	No ▶ Yes ▶	GO to **A8**. GO to **A9**.
A8 CHECK MONITOR CONNECTOR		
• Turn ignition switch to OFF. • Deactivate Air Bag system. • Visually inspect the monitor wiring connector to be sure Pin 5 (Circuit 57, BK) and Pin 4 (Circuit 608, BK/Y) are touching each other. • Turn ignition to RUN. • Does Air Bag lamp light continuously?	Yes ▶ No ▶	GO to **A9**. GO to **A10**.

CP

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Does Not Light
Probable Fault — Inoperative Air Bag Lamp Circuit

TEST STEP		RESULT	ACTION TO TAKE
A9	CHECK CIRCUIT 295 (LB/PK) • Turn ignition switch to OFF. • Deactivate Air Bag system. • Attach voltmeter to Pin 6 (Circuit 295, LB/PK) on monitor wiring connector and to ground. • Turn ignition switch to RUN. • Is voltage greater than 10 volts?	Yes ▶	TURN ignition switch to OFF. REPLACE diagnostic monitor. REACTIVATE air bag system. TURN ignition switch to RUN. VERIFY Air Bag warning lamp.
		No ▶	TURN ignition switch to OFF. CHECK fuse No. 4 (10 amp). REPLACE fuse if blown and/or trace Circuit 295 (LB/PK) from monitor wiring connector Pin 6 to fuse panel to find open and/or short to ground, and SERVICE. REACTIVATE air bag system. Turn ignition to RUN. VERIFY Air Bag warning lamp.
A10	JUMP CIRCUIT 57 (BK) • Reconnect diagnostic monitor assembly connector. • Attach a jumper wire to Pin 5 (Circuit 57, BK) through back of monitor wiring connector and to ground. • Does Air Bag lamp light?	Yes ▶	TURN ignition to OFF. REMOVE jumper wire. SERVICE ground circuit. REACTIVATE air bag system. TURN ignition switch to RUN. VERIFY Air Bag warning lamp.
		No ▶	GO to A11.

CR6744-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Does Not Light
Probable Fault — Inoperative Air Bag Lamp Circuit

TEST STEP		RESULT	ACTION TO TAKE
A11	INSPECT CLUSTER PRINTED CIRCUIT		
	• Turn ignition switch to OFF. • Remove jumper wire. • Disconnect Air Bag lamp. • Visually inspect connector, wire and Air Bag lamp. • Does circuit or connector have any defects and/or is indicator operating properly?	Yes ▶	REPLACE connector and/or cluster as required. ACTIVATE air bag system. TURN ignition switch to RUN. VERIFY Air Bag warning lamp.
		No ▶	TRACE Circuit 608 (BK/Y) from lamp to monitor to find open and SERVICE. REACTIVATE air bag system. TURN ignition to RUN. VERIFY Air Bag warning lamp.

CR6745-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Stays On
Probable Fault — Diagnostic Monitor Disconnected or Faulty

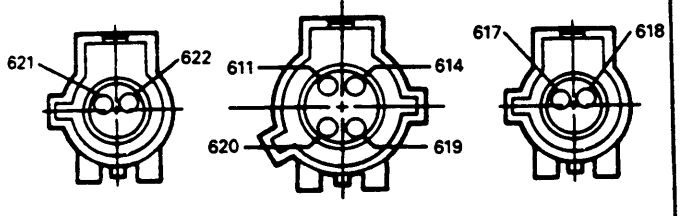
TEST STEP	RESULT ▶	ACTION TO TAKE
B0 DURING SYSTEM PROVE-OUT AIR BAG LAMP STAYS ON		
B1 CHECK DIAGNOSTIC MONITOR		
• Visually inspect diagnostic monitor for proper connection to monitor wiring connector.	Yes ▶	GO to **B2**.
• Is monitor properly connected?	No ▶	MAKE connection. VERIFY light.
B2 CHECKING DIAGNOSTIC MONITOR — CONTINUED		
• Disconnect diagnostic monitor.	No ▶	REPLACE diagnostic monitor. REMOVE object. RECONNECT system. VERIFY Air Bag lamp.
• Insert toothpick or other non-conducting object to wiring connector between Pins 4 and 5, to depress shorting bar between the two terminals.		
• Verify Air Bag lamp.		
• Is Air Bag lamp still on continuously?	Yes ▶	TRACE Circuit 608 (BK/Y) from diagnostic monitor to find contact to ground and SERVICE. RECONNECT system. VERIFY Air Bag lamp.

CR6202-A

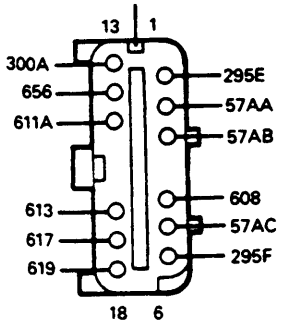
DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Eight Times
Probable Fault — All Forward Crash Sensors Disconnected

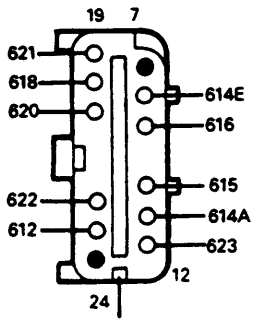
TEST STEP	RESULT ▶	ACTION TO TAKE
2.0 DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATOR OF 2 FLASHES		
2.1 INSPECT FRONT SENSORS		
• Visually inspect all three front sensor assembly connections.	All three sensors are properly connected ▶	GO to **2.2.**
	One or all sensors are not properly connected ▶	Properly connect the sensor(s) or 8-way connector. VERIFY Air Bag lamp.
2.2 INSPECT WIRING CONNECTORS		
• Deactivate air bag system. • Disconnect diagnostic monitor. • Visually inspect monitor wiring connector for proper connection at Pin numbers: 17 (617, PK/O) 18 (619, PK/W) 20 (618, P/LG) 21 (620, P/LB) 22 (622, T/BK) 19 (621, W/Y) • Are all connections made?	Yes ▶	GO to **2.3.**
	No ▶	SERVICE connections. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.



LH FORWARD SENSOR — CENTER FORWARD SENSOR — RH FORWARD SENSOR



DIAGNOSTIC MONITOR CONNECTOR (GRAY)



DIAGNOSTIC MONITOR CONNECTOR (BLACK)

CR6746-A

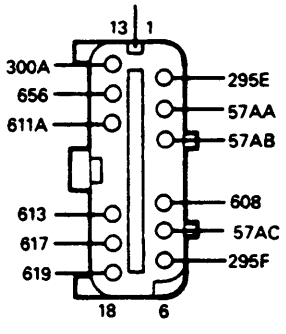
DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Two Times
Probable Fault — All Forward Crash Sensors Disconnected

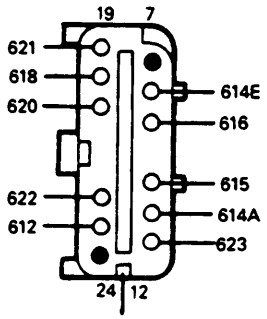
TEST STEP		RESULT	ACTION TO TAKE
2.3	CHECK RESISTANCE IN DIAGNOSTIC MONITOR CIRCUITS		
• Perform all of the following circuit tests with monitor disconnected. • Attach the lead of the ohmmeter to each set of pins indicated on the diagnostic monitor wiring connector to check the resistance between them.		Yes ▶	REPLACE diagnostic monitor. VERIFY Air Bag lamp. REACTIVATE system.
		Resistance is NOT between 1000-1300 ohms on one or more of the tests. ▶	TRACE appropriate circuit(s), find open and SERVICE. CONNECT Diagnostic monitor. VERIFY Air Bag lamp. REACTIVATE system.

Pin A	Pin B	Corresponding Sensor	Circuits
17	20	Right	617 (PK/O) 618 (P/LG)
19	22	Left	621 (W/Y) 622 (T/BK)
18	21	Center	619 (PK/W) 620 (P/LB)

• Is the resistance between 1000-1300 ohms for each test?



DIAGNOSTIC MONITOR CONNECTOR (GRAY)

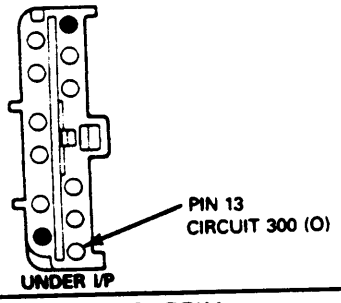


DIAGNOSTIC MONITOR CONNECTOR (BLACK)

CR6747-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Three Times Probable Fault — Loss of Air Bag Circuit Deployment Power and/or Backup Power Supply Disconnected

TEST STEP		RESULT ▶	ACTION TO TAKE
3.0	DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 3 FLASHES		
3.1	VISUAL INSPECTION OF FUSIBLE LINK IN CIRCUIT 37 (Y) • Visually inspect fuse in fuse panel (10 amp position K), for damage. • Is fuse link open (blown)?	Yes ▶	DISCONNECT battery ground cable and backup power supply. TRACE Circuit to find short to ground and SERVICE. REPLACE fuse. RECONNECT battery backup power supply and ground cable. VERIFY Air Bag lamp.
		No ▶	GO to **3.2**.
3.2	CHECK VOLTAGE OF CIRCUIT 300 (O) • Deactivate air bag system. • Disconnect diagnostic monitor. • Attach a voltmeter to Pin 13, Circuit 300 (O) on diagnostic monitor wiring connector and to ground. • Is voltage greater than 10 volts? AIR BAG MONITOR CONNECTOR  	No ▶	DISCONNECT battery ground cable and backup power supply. TRACE Circuit 300 (O) from diagnostic monitor connector to find open circuit and SERVICE. RECONNECT backup power supply and battery ground cable. VERIFY Air Bag lamp. REACTIVATE system.
		Yes ▶	GO to **3.3**.
3.3	CHECK BACKUP POWER SUPPLY • Attach a voltmeter to Pin 14, Circuit 656 (P) on diagnostic wiring connector and ground. • Is voltage greater than 10 volts?	Yes ▶	GO to **3.4**.
		No ▶	CHECK backup power supply. SERVICE as required. If OK, CHECK Circuit 656 (P) and Circuit 300 (O) for opens. SERVICE as required. RECONNECT battery ground cable and backup power supply. VERIFY Air Bag lamp. REACTIVATE system.

CR6748-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Three Times Probable Fault — Loss of Air Bag Circuit Deployment Power and/or Backup Power Supply Disconnected

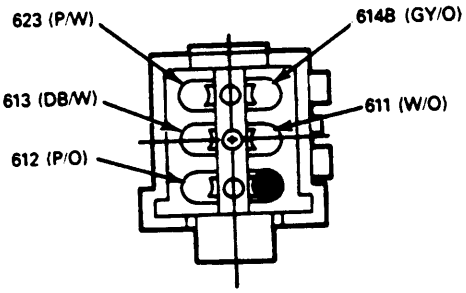
TEST STEP	RESULT ▶	ACTION TO TAKE
3.4 CHECK RESISTANCE IN CIRCUIT 611 (W/O)		
• Using an ohmmeter find resistance in Pin 15 Circuit 611 (W/O) on diagnostic monitor wiring connector and to ground. • Is resistance less than 1 ohm?	No ▶	REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
	Yes ▶	GO to **3.5**.
3.5 CHECK RESISTANCE IN CIRCUIT 611 (W/O) — CONTINUED		
• Disconnect rear safing sensor. • Attach ohmmeter to Pin 15 (Circuit 611, W/O) on diagnostic monitor wiring connector and to ground. • Is resistance less than 1 ohm?	No ▶	GO to **3.7**.
	Yes ▶	GO to **3.6**.
3.6 CHECK RESISTANCE IN CIRCUIT 611 (W/O) — CONTINUED		
• Disconnect center front sensor. • Attach ohmmeter to Pin 15 (611 W/O) on diagnostic monitor wiring connector and to ground. • Is resistance less than 1 ohm?	No ▶	REPLACE center front sensor. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
	Yes ▶	TRACE Circuit 611 (W/O) to find contact to ground and SERVICE. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.

CR3290-C

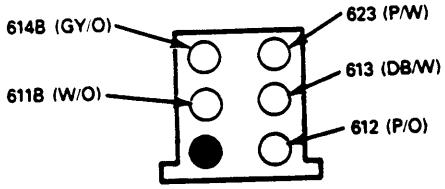
DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Three Times
Probable Fault — Loss of Air Bag Circuit Deployment Power and/or Backup Power Supply Disconnected

TEST STEP		RESULT	ACTION TO TAKE
3.7	CHECK RESISTANCE IN CIRCUIT 612 (P/O) • Attach ohmmeter to Circuit 612 (P/O) on rear safing sensor wiring connector and to ground. • Is resistance less than 1 ohm?	No	REPLACE rear safing sensor. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
		Yes	TRACE Circuit 612 (P/O) to find contact to ground and SERVICE. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.



REAR SAFING SENSOR CONNECTOR



REAR SAFING SENSOR HARNESS CONNECTOR

CR6749-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Four Times
Probable Fault — Potential Short in Air Bag Deployment Circuit

	TEST STEP	RESULT ▶	ACTION TO TAKE
4.0	DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 4 FLASHES		
4.1	CHECK REAR SAFING SENSOR GROUND		
	• Deactivate system. • Place jumper wire on dash panel sensor Circuit 613 (DBW) and to ground. • Verify lamp. Does Air Bag lamp flash code 4?	Yes ▶ No ▶	GO to 4.4. GO to 4.2.
4.2	CONTINUE REAR SAFING SENSOR CHECK		
	• Remove jumper wire. • Loosen and tighten rear safing sensor attaching screws. • Turn ignition switch to RUN. • Does Air Bag lamp flash code 4?	Yes ▶ No ▶	GO to 4.3. VERIFY air bag lamp.
4.3	CHECK SAFING SENSOR GROUND CIRCUIT		
	• Turn ignition switch to OFF. • Disconnect rear safing sensor wiring connector. • Attach ohmmeter to Circuit 613 (DBW) in sensor connector and to ground. • Is resistance less than one ohm?	Yes ▶ No ▶	INSPECT connector terminals and wires and SERVICE as required. REACTIVATE system. VERIFY Air Bag lamp. REPLACE rear safing sensor. REACTIVATE system. VERIFY Air Bag lamp.
4.4	CHECK 611 CIRCUIT IN CENTER FRONT SENSOR		
	• Remove jumper wire. • Disconnect center front sensor. • Verify lamp. Does lamp flash code 4?	Yes ▶ No ▶	GO to 4.5. REPLACE center front sensor. RECONNECT system. VERIFY lamp. REACTIVATE system. VERIFY lamp.
4.5	CONTINUE CIRCUIT 611 CHECK		
	• Check resistance between Circuit 611 (Pin 15) and 612 (Pin 23) at the back of the diagnostic monitor connector. • Is resistance less than one ohm?	Yes ▶ No ▶	GO to 4.7. GO to 4.6.

CR6723-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Four Times
Probable Fault — Potential Short in Air Bag Deployment Circuit

TEST STEP	RESULT ▶	ACTION TO TAKE
4.6 CHECK 611 IN REAR SAFING SENSOR • Disconnect rear safing sensor. • Check resistance between Circuits 611 (W/O) and 612 (P/O). • Is resistance less than one ohm?	Yes ▶	TRACE Circuits 611 and 612 back to diagnostic monitor for open circuit and SERVICE (check connectors and terminals to confirm proper connections). If no open circuit exists, REPLACE diagnostic monitor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.
	No ▶	REPLACE rear safing sensor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.
4.7 CHECK FOR REAR SAFING SENSOR SHORT OR FORWARD CRASH SENSOR INPUT SHORT • Check voltage at back of diagnostic monitor connector Circuit 617 (Pin 17, PK/O) and to ground. • Is voltage less than one volt?	Yes ▶	GO to **4.8**.
	No ▶	A short to B + exits in the forward crash sensor input Circuits 615 (GY/W), 616 (PK/BK), 617 (PK/O), 619 (PK/W), or 621 (W/Y). DISCONNECT diagnostic monitor and CHECK for voltage on these circuits. If no short to B + exists, REPLACE diagnostic monitor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.

CR6179-B

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Four Times
Probable Fault — Potential Short in Air Bag Deployment Circuit

TEST STEP	RESULT	ACTION TO TAKE
4.8 CHECK CIRCUIT 623 (P/W) • Disconnect rear safing sensor. • With voltmeter, probe wiring connector Circuit 623 (P/W) to ground. • Is 623 at battery voltage?	Yes ▶ No ▶	GO to **4.10**. GO to **4.9**.
4.9 CHECK 623 OPEN • With voltmeter, check wiring harness side of connector to diagnostic monitor, Circuit 623 (Pin 12, P/W). • Is 623 at battery voltage?	Yes ▶ No ▶	SERVICE open in Circuit 623 (P/W) between diagnostic monitor and rear sensor. RECONNECT system. REACTIVATE system. VERIFY lamp. REPLACE diagnostic monitor.
4.10 CHECK CIRCUIT 623 SHORT TO BATTERY POSITIVE (B+) • Disconnect diagnostic monitor. • With voltmeter, check rear safing sensor wiring connector Circuit 623 (P/W) and to ground. • Is 623 still at battery voltage?	Yes ▶ No ▶	Short to B+ exists in Circuit 623 between diagnostic monitor and rear safing sensor. TRACE circuit and SERVICE. If no short exists, REPLACE diagnostic monitor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp. RECONNECT diagnostic monitor. GO to **4.11**.
4.11 CHECK REAR SAFING SENSOR OR CIRCUIT 614 • With diagnostic module reconnected, check rear safing sensor resistance between Circuits 623 (P/W) and 614 (BY/O). • Is resistance less than one ohm?	Yes ▶ No ▶	GO to **4.12**. REPLACE rear safing sensor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.

CR6724-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Four Times
Probable Fault — Potential Short in Air Bag Deployment Circuit

TEST STEP		RESULT	ACTION TO TAKE
4.12	CONTINUE REAR SAFING SENSOR CHECKS		
	• Check rear safing sensor resistance between Circuit 623 (P/W) and Circuits 611 (W/O), 612 (P/O), and 613 (DB/W). • Are all paths open circuits (off scale)?	Yes ▶	An open exists in 614 (GY/O) between the rear safing sensor and the diagnostic monitor Pins 8 or 11. FIND open and SERVICE. If no open exists, REPLACE diagnostic monitor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.
		No ▶	REPLACE rear safing sensor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.

CR6725-A

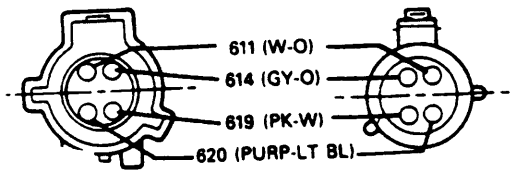
DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Five Times
Probable Fault — Forward Crash Sensor Or Ignition Circuit Shorted to Ground

TEST STEP	RESULT	ACTION TO TAKE
5.0 DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 5 FLASHES		
5.1 CHECK AIR BAGS • Turn ignition switch to OFF. • Deactivate system. • Verify lamp. Does Air Bag lamp flash 5 times?	Yes ▶ No ▶	GO to **5.2**. DISCONNECT battery ground and backup power supply. REPLACE driver air bag. RECONNECT and REACTIVATE system. VERIFY Air Bag lamp. If code 10 is present, REPLACE diagnostic monitor.
5.2 VERIFY LAMP WITH ALL THREE FRONT SENSORS DISCONNECTED • Deactivate system. • Disconnect all front sensors (Left, Right and Center). • Verify Air Bag lamp.	Air Bag lamp flashes fault code 5 ▶ Air Bag lamp flashes fault code 10 ▶ Air Bag lamp does not flash either fault 5 or 10 ▶	GO to **5.3**. GO to **5.4**. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
5.3 CHECK RESISTANCE OF THE FRONT SENSORS • Check for intermittent short in Circuits 617, 619. • Perform all three of the following tests. • Attach ohmmeter to ground and to appropriate pin on each front sensor connector. • Is resistance between 1000-1300 ohms for each sensor?	Yes ▶ Resistance is NOT between 1000-1300 ohms for one or all sensors ▶	REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system. REPLACE faulty sensor(s). VERIFY Air Bag lamp. If lamp flashes fault code 10, INSTALL a new diagnostic monitor. REACTIVATE system. VERIFY Air Bag lamp.

Sensor	Circuit	Pin	Wire Color
Right	617	17	PK/O
Left	621	19	PK/O
Center	619	18	PK/W

FRONT CENTER SENSOR



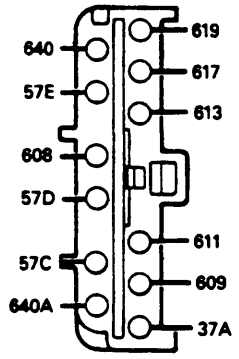
CR6736-A

DIAGNOSIS AND TESTING (Continued)

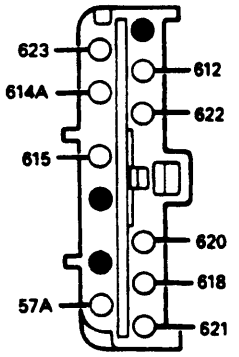
Fault Indication — Air Bag Lamp Flashes Five Times
Probable Fault — Shorted Forward Crash Sensor Deployment Circuit

TEST STEP		RESULT	ACTION TO TAKE
5.4	CHECK RESISTANCE IN CIRCUITS 617 (PK/O), 619 (PK/W) AND 621 (W/Y)		
• Disconnect diagnostic monitor. • Perform all three of the following tests. • Attach ohmmeter to ground and to appropriate pin on the diagnostic monitor wiring connector.		Yes ▶	TRACE appropriate circuit(s) to find contact to ground and SERVICE. RECONNECT system. VERIFY Air Bag lamp. If lamp flashes fault code 10, INSTALL a new diagnostic monitor. REACTIVATE system. VERIFY Air Bag lamp.
• Is resistance less than 1 ohm for any test?		Resistance is 1 ohm or greater ▶	GO to 5.5.
5.5	CHECK CIRCUIT 615 (GY/W) BETWEEN MONITOR AND DRIVER AIR BAG		
• Remove jumper in wiring connector to driver air bag. Leave open. • Fault code should change to Code 4 or Code 6.		Code 6 ▶ Code 4 ▶	GO to 5.6. GO to 5.7.

Pin No.	Circuit	Wire Color
17	617	PK/O
18	619	PK/W
19	621	W/Y



DIAGNOSTIC MONITOR CONNECTOR — GRAY



DIAGNOSTIC MONITOR CONNECTOR — BLACK

CR6737-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Five Times
Probable Fault — Forward Crash Sensor or Igniter Circuit Shorted to Ground

TEST STEP	RESULT	ACTION TO TAKE
5.6 CHECK CLOCKSPRING • Short to ground in Circuit 615 (GY/W) between driver air bag and diagnostic monitor. • Disconnect clockspring connector to 14401 at base of column. • Jumper wiring connector Circuits 614 (GY/O) and 615 (GY/W). • Verify lamp. Does lamp flash code 6?	Yes ▶	TRACE and SERVICE Circuit 615 short to ground between clockspring and diagnostic monitor. If code 10 is present, or no short exists, REPLACE diagnostic monitor.
	No lamp goes out ▶	REPLACE clockspring. RECONNECT system. If code 10 is present, REPLACE monitor. VERIFY Air Bag lamp.
5.7 SHORT IN CIRCUIT 614 (GY/O) OR 623 (P/W) CHECK CIRCUIT 614 (GY/O) • Disconnect rear safing sensor. • With an ohmmeter, check Circuit 614 (GY/O) Pin 11 and ground. • Is resistance less than 1 ohm?	Yes ▶	A short to ground exists in Circuit 614 (GY/O) between safing sensors, air bag and Pin 11 of diagnostic monitor. TRACE short to ground. REPAIR as required. RECONNECT and REACTIVATE system. VERIFY lamp. If no short is found, or code 10 is present, replace diagnostic module.
	No ▶	GO to **5.8**.
5.8 CHECK CIRCUIT 623 (P/W) PIN 12 • With an ohmmeter check Circuit 623 (P/W) Pin 12 and ground. • Is resistance less than 1 ohm?	Yes ▶	TRACE short to ground in Circuit 623 (P/W). REPAIR as required. RECONNECT and REACTIVATE system. VERIFY lamp. If code 10 exists, REPLACE monitor.
	No ▶	GO to **5.9**.

CR6738-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Five Times
Probable Fault — Forward Crash Sensor or Igniter Circuit Shorted to Ground

TEST STEP		RESULT	ACTION TO TAKE
5.9	CHECK REAR SAFING SENSOR		
	• With an ohmmeter, check Circuit 623 (P/W) in sensor connector and ground. (With sensor attached to vehicle.) • Is resistance less than 1 ohm?	Yes ▶	REPLACE rear safing sensor. If code 10 exists, REPLACE diagnostic monitor. RECONNECT and REACTIVATE system. VERIFY Air Bag lamp.
		No ▶	REPLACE diagnostic monitor. RECONNECT and REACTIVATE system. VERIFY Air Bag lamp.

CR6739-A

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DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Six Times
Probable Fault — Driver Air Bag Circuit Inoperative

TEST STEP	RESULT	ACTION TO TAKE
6.0 DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT CODE OF 6 FLASHES		
6.1 CHECK DRIVER AIR BAG		
• Deactivate air bag system. • Verify Air Bag lamp while slowly rotating the steering wheel assembly. • Does the Air Bag lamp still flash fault code 6 and/or flash intermittently?	Yes ▶ No ▶	GO to **6.2**. DISCONNECT battery ground cable and power supply. REMOVE jumper wire. INSTALL a new driver air bag. RECONNECT system. VERIFY Air Bag lamp
6.2 CHECK CLOCKSPRING		
• Disconnect Air Bag clockspring wiring connector at base of column. • Place a jumper wire across Circuits 614 (GY/O) and 615 (PK) of the wiring connector. • Verify Air Bag lamp. • Does the Air Bag lamp still flash fault code 6?	Yes ▶ No ▶	GO to **6.3**. DISCONNECT battery ground cable and power supply. REMOVE jumper wire from air bag clockspring wiring connector. INSTALL new clockspring. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
6.3 CHECK AIR BAG DIAGNOSTIC MONITOR CONNECTORS		
• Remove jumper wire from air bag clockspring wiring connector. • Disconnect diagnostic monitor connectors. • Before continuing, visually inspect connector to ensure that Pin 11, Circuit 614 (GY/O) and Pin 10, Circuit 615 (PK) are touching. • Attach ohmmeter to Pin 11. Circuit 614 (GY/O) on the diagnostic monitor wiring connector and to Circuit 614 (PK) clockspring wiring connector. • Is resistance less than 1 ohm?	Yes ▶ No ▶	GO to **6.4**. TRACE Circuit 614 (GY/O) from clockspring wiring connector to diagnostic monitor connector to locate and SERVICE open circuit. RECONNECT system. REACTIVATE air bag system. VERIFY Air Bag lamp.

CR6210-8

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Six Times
Probable Fault — Driver Air Bag Circuit Inoperative

TEST STEP	RESULT ▶	ACTION TO TAKE
6.4 CHECK RESISTANCE IN CIRCUITS		
• Attach ohmmeter to Pin 10. Circuit 615 (GY/N) on diagnostic monitor wiring connector and to Circuit 615 (PK) on the clockspring connector. • Is resistance less than 1 ohm?	Yes ▶	INSPECT connector for properly seated pins. If okay, INSTALL a new diagnostic monitor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.
	No ▶	TRACE Circuit 615 (GY/W) from clockspring connector to diagnostic monitor assembly to find open and SERVICE. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Seven Times Probable Fault — Passenger Air Bag Circuit Inoperative

TEST STEP	RESULT ▶	ACTION TO TAKE
7.0 DURING SYSTEM PROVE OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 7 FLASHES.		
7.1 VERIFY AIR BAG LAMP • Deactivate passenger air bag. • Verify Air Bag lamp.	Air Bag lamp still flashes fault code 7 ▶	GO to 7.2.
	Air Bag lamp does not flash fault code 7 ▶	DISCONNECT battery ground cable and power supply. REMOVE jumper wire used in deactivation of passenger air bag. REPLACE passenger air bag. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.
7.2 CHECK DIAGNOSTIC MONITOR CONNECTOR • Deactivate driver air bag. • Remove jumper wire from passenger air bag wiring connector. • Disconnect diagnostic monitor. • Visually inspect the monitor wiring connector to be sure Pin 8 Circuit 614 (GY-O) and Pin 9 Circuit 616 (PK/BK) are touching.	Pins are not touching ▶	SERVICE or REPLACE connector as required. RECONNECT system. REACTIVATE Air Bag system (passenger and driver). VERIFY Air Bag lamp.
	Pins are touching as required ▶	GO to 7.3.
7.3 CHECK RESISTANCE IN CIRCUIT 614 (GY/O) • Using an ohmmeter, attach a lead to Pin 8 Circuit 614 (GY/O) on the monitor wiring connector and the other lead to Circuit 614 (GY/O) on the passenger air bag wiring connector to find the resistance.	Resistance is less than one ohm ▶	GO to 7.4.
	Resistance is one ohm or greater ▶	TRACE Circuit 614 (GY/O) from passenger air bag wiring connector to LOCATE and SERVICE open circuit. RECONNECT system. REACTIVATE air bag system (passenger and driver). VERIFY Air Bag lamp.

CR6186-B

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Seven Times
Probable Fault — Passenger Air Bag Circuit Inoperative

TEST STEP		RESULT ▶	ACTION TO TAKE
7.4	CHECK RESISTANCE IN CIRCUIT 616 (PK/BK)		
• Using an ohmmeter, attach a lead to Pin 9 Circuit 614 (BY/O) on the monitor wiring connector and the other lead to Circuit 616 (PK/BK) on the Passenger Air Bag wiring connector to find resistance.		Resistance is less than one ohm ▶	REPLACE diagnostic monitor. RECONNECT system. REACTIVATE Air Bag system (Passenger and Driver). VERIFY Air Bag lamp.
		Resistance is one ohm or greater ▶	TRACE Circuit 616 (PK/BK) from Passenger Air Bag wiring connector to monitor wiring connector to LOCATE and SERVICE open circuit. RECONNECT system. REACTIVATE Air Bag system (Passenger and Driver). VERIFY Air Bag lamp.

CR6187-A

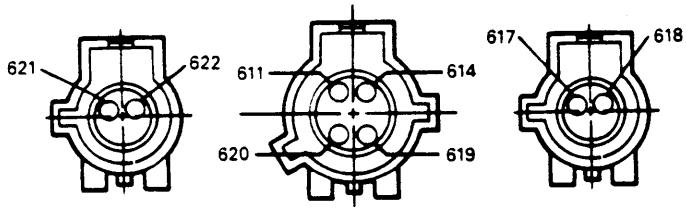
DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Eight Times
Probable Fault — Forward Crash Sensor Improperly Attached or Ground

TEST STEP	RESULT	ACTION TO TAKE
8.0 DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 8 FLASHES		
8.1 INSPECT FRONT SENSORS • Visually inspect each front sensor to ensure they are attached (properly grounded) to the vehicle. • Are all sensors properly attached to vehicle?	Yes ▶ No ▶	GO to **8.2**. ATTACH sensor(s) properly. VERIFY Air Bag lamp.
8.2 INSPECT EACH SENSOR'S WIRING CONNECTORS • Visually check each front sensor connector for proper connection to the vehicle wiring. • Are all sensors properly connected?	Yes ▶ No ▶	GO to **8.3**. CONNECT sensor(s) properly. VERIFY Air Bag lamp.
8.3 CHECK FOR RESISTANCE IN FRONT SENSORS • Disconnect battery ground and power supply. • Disconnect all front sensors. • Perform the following tests. • Attach an ohmmeter to ground and to appropriate pin on each front sensor connector.	Yes ▶ No ▶	GO to **8.4**. REPLACE sensor(s). VERIFY Air Bag lamp.

Sensor	Circuit	Wire Color
Right	618	P/LG
Left	622	T/BK
Center	620	P/LB

• Is resistance less than 1 ohm for each test?



LH FORWARD SENSOR — CENTER FORWARD SENSOR — RH FORWARD SENSOR

CR6750-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Eight Times
Probable Fault — Forward Crash Sensor Improperly Attached or Grounded

TEST STEP		RESULT ▶	ACTION TO TAKE
8.4	CHECK FOR RESISTANCE IN CIRCUITS 618 (P/LG), 620 (P/LB) AND 622 (T/BK)		
• Reconnect all front sensors. • Perform all three of the following tests. • Attach ohmmeter to ground and to appropriate pin on diagnostic monitor connector. Probe back of connector.		Yes ▶	INSPECT terminals in diagnostic monitor connector and SERVICE as required. If terminals and connections are OK, INSTALL a new diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp.
Pin No.	Circuit / Wire Color		
20	618 P/LG	No ▶	TRACE appropriate circuit(s) to find open(s) and SERVICE. RECONNECT system. VERIFY Air Bag lamp.
21	620 P/LB		
22	622 T/BK		
• Is the resistance less than 1 ohm for each test?			

CR4884-B

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Nine Times
Probable Fault — Open Forward Crash Sensor Deployment Circuit

TEST STEP		RESULT ▶	ACTION TO TAKE
9.0	DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 9 FLASHES		
9.1	INSPECT EACH FRONT SENSOR CONNECTOR TO VEHICLE WIRING		
• Visually inspect each front sensor, left, right, and center for a proper connection to the vehicle wiring. • Are all sensors properly connected?		Yes ▶ No ▶	GO to **9.2**. CONNECT sensor(s) properly. VERIFY air bag lamp.
9.2	CHECK RESISTANCE OF EACH FRONT SENSOR		
• Disconnect battery ground cable and power supply. • Disconnect all front sensors. • Perform all three of the following tests on all three of the front sensors. • Attach ohmmeter to ground and to appropriate pin on front sensor connector.		Yes ▶ No ▶	GO to **9.3**. REPLACE those sensors that did not have a resistance between 1000-1300 ohms. RECONNECT system. VERIFY air bag lamp.
Sensor	**Circuit**	**Wire Color**	
Right	617	PK/O	
Center	619	PK/W	
Left	621	W/Y	
• Is resistance of each sensor between 1000-1300 ohms for each test?			
9.3	CHECK RESISTANCE OF CIRCUITS 617 (PK/O), 619 (PK/W) AND 621 (W/Y)		
• Reconnect front sensors. • Deactivate system. • Perform all three of the following tests. • Disconnect diagnostic monitor and attach ohmmeter to ground and to appropriate pin on diagnostic monitor wiring connector.		Yes ▶ No ▶	REPLACE diagnostic monitor. RECONNECT system. VERIFY air bag lamp. REACTIVATE system. TRACE appropriate circuits to locate opens and SERVICE. RECONNECT system. VERIFY air bag lamp. REACTIVATE system.
Pin No.	**Circuit**	**Wire Color**	
17	617	PK/O	
18	619	PK/W	
19	621	W/Y	
• Is the resistance between 1000-1300 ohms for each test?			

CR4885-C

DIAGNOSIS AND TESTING (Continued)

Fault Indication—Air Bag Lamp Flashes 10 Times

Probable Fault:

- Firing circuit disarm device blown due to deployment circuit shorted to ground.

NOTE: A thermal fuse is built into the diagnostic monitor that opens the battery and power supply circuit to the air bag should a short occur in the air bag deployment circuit without a safing sensor being closed. This prevents unwanted air bag deployment due to damaged vehicle wiring.

The Code 10 is a result of a short to ground, as described in the diagnosis for a Code 5. Code 10 is normally found after repair of a Code 5 condition. If the Code 5 is intermittent, just the Code 10 may be showing. Always look for shorts before repairing the Code 10, (replacing the diagnostic monitor. **Since the thermal fuse is built into the diagnostic monitor, the monitor must be replaced to repair a Code 10. Refer to Code 5 diagnosis.**

Ford Crown Victoria/Mercury Grand Marquis

NOTE: The following diagnosis and testing procedures cover Ford Crown Victoria and Mercury Marquis vehicles with driver air bag only. For Diagnosis of Lincoln Town Car, refer to Diagnosis and Testing, Lincoln Town Car in this Section.

FAULT CODE PRIORITIES

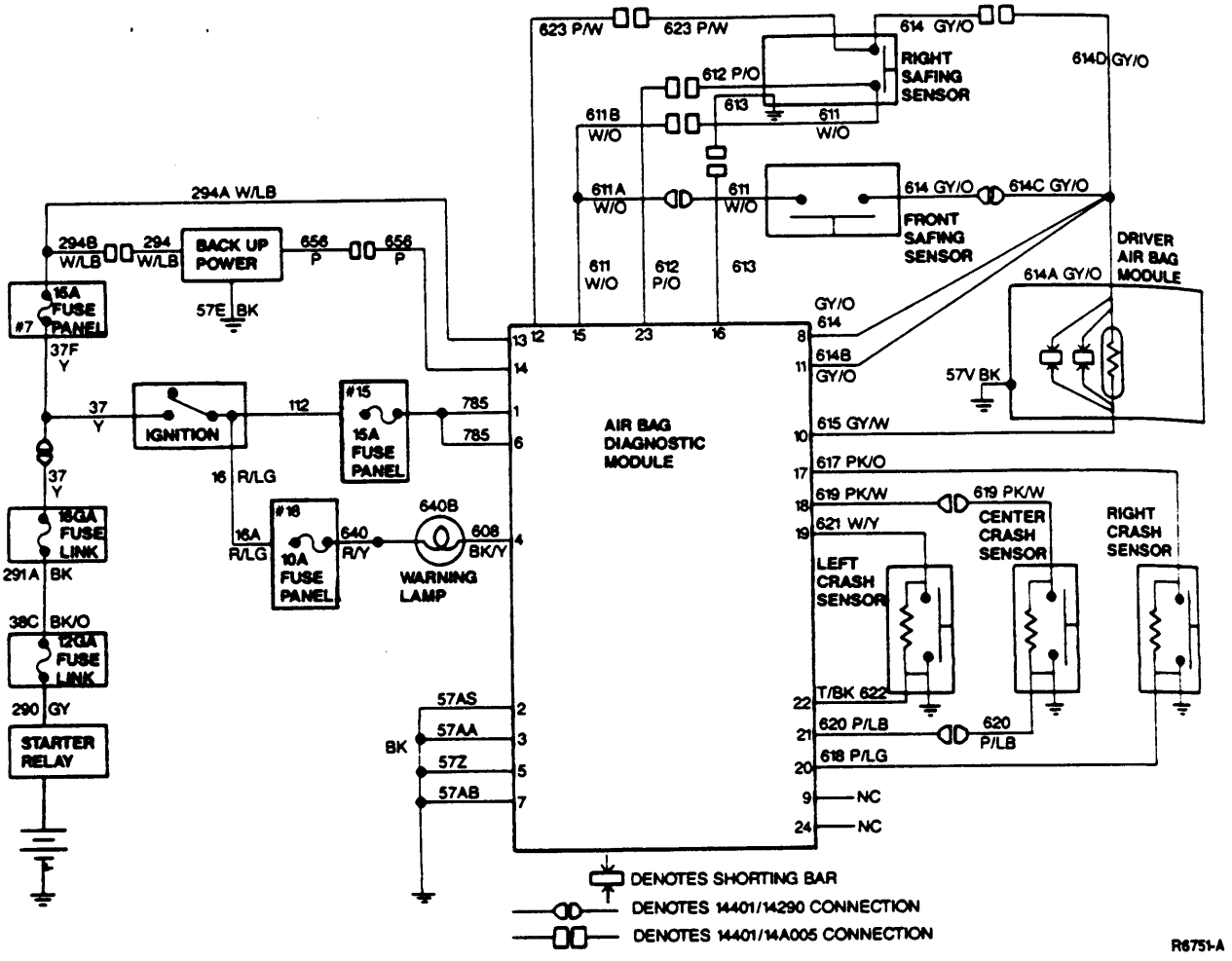
Number of Flashes	Probable Fault
No Lamp	Inoperative air bag indicator lamp circuit
Continuous Lamp	Faulty monitor or disconnected or loose monitors
3	Loss of air bag deployment circuit power. Backup power supply disconnected
5	Shorted forward impact sensor deployment circuit or potential short in air bag deployment circuit
10	Faulty firing circuit disarm device
4	Potential short in air bag deployment circuit. Must use Diagnosis Guide No. 4 for diagnosis
6	Driver air bag circuit inoperative
7	Passenger air bag circuit inoperative
8	Forward impact sensor improperly attached or grounded
9	Open forward impact sensor deployment circuit
2	All forward impact sensors disconnect

CR6191-B

DIAGNOSIS AND TESTING (Continued)

Air Bag System Schematic

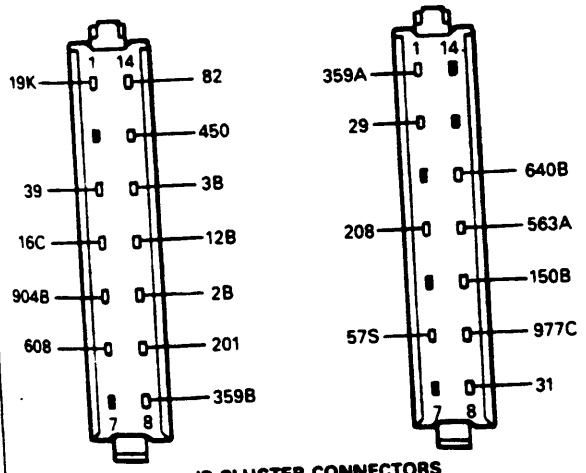
Ford Crown Victoria/Mercury Grand Marquis



DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Does Not Light
Probable Fault — Inoperative Air Bag Lamp Circuit

TEST STEP		RESULT ▶	ACTION TO TAKE
A0	DURING SYSTEM PROVE-OUT AIR BAG INDICATOR LAMP DID NOT LIGHT		
A1	CHECK WARNING LAMPS • Turn ignition switch from OFF to RUN. • Warning lamps should light. • Do engine and safety belt warning lamps light?	Yes ▶ No ▶	GO to **A6**. GO to **A2**.
A2	CHECK FUSE • Turn ignition switch to OFF. • Check warning lamps fuse. • Is fuse blown?	Yes ▶ No ▶	GO to **A3**. GO to **A4**.
A3	REPLACE FUSE • Install new fuse into fuse panel. • Turn ignition switch to RUN. • Did fuse blow again?	No ▶ Yes ▶	VERIFY Air Bag warning lamps. TURN ignition switch to OFF. DEACTIVATE air bag system. TRACE Circuit 640 (R/Y) from cluster connector to fuse panel, to find short to ground and SERVICE. REACTIVATE system and VERIFY warning lamps.
A4	RECHECK WARNING LAMPS • Remove cluster connector, then reconnect connector. • Turn ignition switch from OFF to RUN. • Verify warning lamps. • Do warning lamps light?	No ▶ Yes	GO to **A5**. VERIFY Engine, Safety Belt and Air Bag warning lamps.



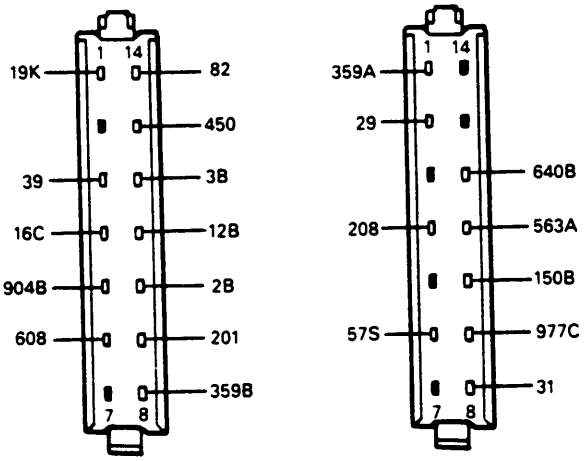
IP CLUSTER CONNECTORS

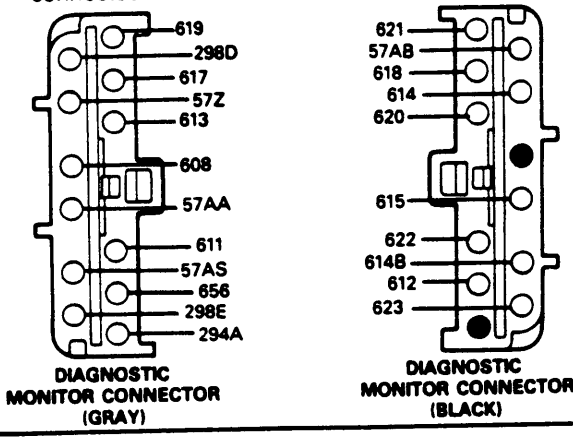
CR6752-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Does Not Light
Probable Fault — Inoperative Air Bag Lamp Circuit

TEST STEP	RESULT	ACTION TO TAKE
A5 CHECK CIRCUIT 640 (R/Y) FOR OPEN CIRCUIT • Turn ignition switch to OFF. • Deactivate air bag system. • Remove warning lamps fuse. • Attach ohmmeter to Circuit 640 (R/Y) at fuse panel and cluster wiring connector. • Is resistance less than 1 ohm?	Yes ▶	REPLACE bulbs and/or cluster printed circuit as required. REACTIVATE system and VERIFY warning lamps.
	No ▶	TRACE Circuit 640 (R/Y) from Cluster connector to fuse panel to find open in circuit, and REPAIR. REACTIVATE air bag system and VERIFY warning lamps.
A6 CHECK THAT MONITOR CONNECTOR IS PROPERLY CONNECTED • Are the diagnostic monitor connectors properly connected?	Yes ▶	GO to **A7**.
	No ▶	Properly connect diagnostic monitor connectors. VERIFY Air Bag lamp. If Air Bag lamp does not light GO to **A8**.





DIAGNOSTIC MONITOR CONNECTOR (GRAY)

DIAGNOSTIC MONITOR CONNECTOR (BLACK)

CR6753-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Does Not Light
Probable Fault — Inoperative Air Bag Lamp Circuit

TEST STEP		RESULT ▶	ACTION TO TAKE
A7	CHECK LAMP WITH MONITOR CONNECTOR DISCONNECTED		
• Turn ignition switch to OFF. • Disconnect diagnostic monitor wiring from monitor assembly. • Turn ignition switch to RUN. • Is the air bag lamp continuously on?		No ▶ Yes ▶	GO to **A8**. GO to **A9**.
A8	CHECK MONITOR CONNECTOR		
• Turn ignition switch to OFF. • Deactivate air bag system. • Visually inspect the monitor connector to be sure Pin 5 (Circuit 57, BK) and Pin 4 (Circuit 608, BK/Y) are touching each other. • Turn ignition switch to RUN. • Does air bag lamp flash continuously?		Yes ▶ No ▶	GO to **A9**. GO to **A10**.

CR3279-D

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Does Not Light
Probable Fault — Inoperative Air Bag Lamp Circuit

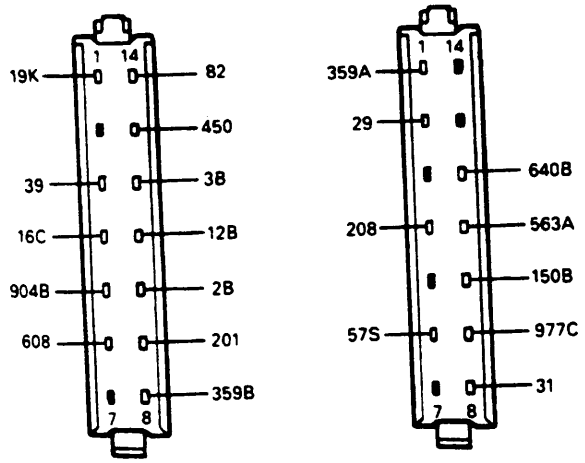
TEST STEP		RESULT	ACTION TO TAKE
A9	CHECK CIRCUIT 298 (P/O) • Turn ignition switch to OFF. • Deactivate air bag system. • Attach voltmeter to Pin 6 (Circuit 785) on monitor wiring connector and to ground. • Turn ignition switch to RUN. • Is voltage greater than 10 volts?	Yes ▶	TURN ignition switch to OFF. REPLACE diagnostic monitor. REACTIVATE air bag system. TURN ignition switch to RUN. VERIFY Air Bag warning lamp.
		No ▶	TURN ignition switch to OFF. CHECK fuse No. 15 (15 amp). REPLACE fuse if blow and/or trace Circuit 78- from monitor wiring connector Pin 6 to fuse panel to find open and or short to ground, and REPAIR. REACTIVATE air bag system. Turn ignition to RUN. VERIFY Air Bag warning lamp.
A10	JUMP CIRCUIT 57 (BK) • Reconnect diagnostic monitor assembly connector. • Attach a jumper wire to Pin 5 (Circuit 57, BK) through back of monitor wiring connector and to ground. • Does Air Bag lamp light?	Yes ▶	TURN ignition to OFF. REMOVE jumper wire. SERVICE ground circuit REACTIVATE air bag system. TURN ignition switch to RUN. VERIFY Air Bag warning lamp.
		No ▶	GO to **A11**.

CR6754-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Does Not Light
Probable Fault — Inoperative Air Bag Lamp Circuit

TEST STEP		RESULT	ACTION TO TAKE
A11	INSPECT CLUSTER PRINTED CIRCUIT		
	• Turn ignition switch to OFF. • Remove jumper wire. • Disconnect cluster connector. • Visually inspect cluster printed circuit and Air Bag lamp. • Does printed circuit or connector have any defects and/or is Air Bag lamp burnt out?	Yes ▶	REPLACE printed circuit, connector and/or bulb as required. ACTIVATE air bag system. TURN ignition switch to RUN. VERIFY Air Bag warning lamp.
		No ▶	TRACE Circuit 608 (BK/Y) from cluster to find open and SERVICE. REACTIVATE air bag system. TURN ignition to RUN. VERIFY Air Bag warning lamp.



AIR BAG BAG MONITOR CONNECTORS

CR6755-A

DIAGNOSIS AND TESTING (Continued)

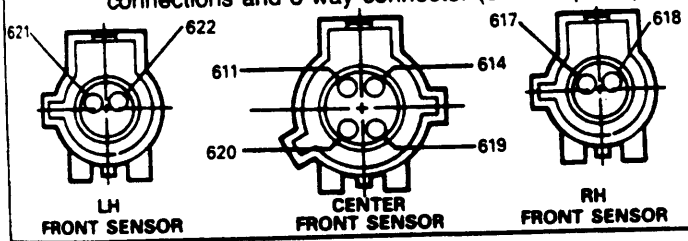
Fault Indication — Air Bag Lamp Stays On
Probable Fault — Diagnostic Module Fault

TEST STEP		RESULT ▶	ACTION TO TAKE
B0	DURING SYSTEM PROVE-OUT AIR BAG LAMP STAYS ON		
B1	CHECK DIAGNOSTIC MONITOR		
	• Visually inspect diagnostic monitor for proper connection to monitor wiring connector. • Is diagnostic monitor properly connected?	Yes ▶ No ▶	GO to B2. SERVICE connector. VERIFY Air Bag lamp.
B2	CHECKING DIAGNOSTIC MONITOR — CONTINUED		
	• Disconnect diagnostic monitor. • Insert toothpick or other non-conducting object into wiring connector between Pins 4 and 5 to depress shorting bar between the two terminals. • Verify Air Bag lamp. • Is Air Bag lamp still on?	No ▶ Yes ▶	REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. TRACE Circuit 608 (BK/Y) from diagnostic monitor to find contact to ground and SERVICE. RECONNECT system. VERIFY Air Bag lamp.

CR6756-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Two Times
Probable Fault — All Forward Crash Sensors Disconnected

TEST STEP		RESULT ▶	ACTION TO TAKE
2.0	DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATOR OF 2 FLASHES		
2.1	INSPECT FRONT SENSORS • Visually inspect all three front sensor assembly connections and 8-way connector (on fuse panel).  	All three sensors are properly connected ▶ One or all sensors are not properly connected ▶	GO to 2.2. Properly connect the sensor(s) or 8-way connector. VERIFY Air Bag lamp.
2.2	INSPECT WIRING CONNECTORS • Deactivate air bag system. • Disconnect diagnostic monitor. • Visually inspect monitor wiring connector for proper connection at Pin numbers: 17 (617, PK/O) 18 (619, PK/W) 20 (618, P/LG) 21 (620, P/LB) 22 (622, T/BK) 19 (621, W/Y) • Are all connections made?	Yes ▶ No ▶	GO to 2.3. SERVICE connections. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.

CR6757-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Two Times
Probable Fault — All Forward Crash Sensors Disconnected

TEST STEP	RESULT ▶	ACTION TO TAKE
2.3 CHECK RESISTANCE IN DIAGNOSTIC MONITOR CIRCUITS		
• Perform all of the following circuit tests with monitor disconnected. • Attach the lead of the ohmmeter to each set of pins indicated on the diagnostic monitor wiring connector to check the resistance between them.	Yes ▶	REPLACE diagnostic monitor. VERIFY Air Bag lamp. REACTIVATE system.
	Resistance is NOT between 1000-1300 ohms on one or more of the tests. ▶	TRACE appropriate circuit(s) and find open and SERVICE. CONNECT diagnostic monitor. VERIFY Air Bag lamp. REACTIVATE system.

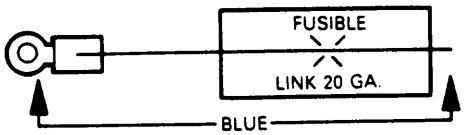
Pin A	Pin B	Corresponding Sensor	Circuits
17	20	Right	617 (PK/O)/ 618 (P/LG)
19	22	Left	621 (W/Y)/ 622 (T/BK)
18	21	Center	619 (PK/W)/ 620 (P/LB)

• Is the resistance between 1000-1300 ohms for each test?

CR3288-B

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Three Times Probable Fault — Loss of Air Bag Circuit Deployment Power or Backup Power Supply Disconnected

TEST STEP		RESULT ▶	ACTION TO TAKE
3.0	DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 3 FLASHES		
3.1	VISUAL INSPECTION OF FUSIBLE LINK IN CIRCUIT 38 (BK/O) • Visually inspect 16 gauge and 12 gauge fusible links in Circuit 38 (BK/O) for damage. (Fuse link attaches to starter relay).  • Inspect No. 7 fuse (15 amp) • Are fuse links or fuse blows?	Yes ▶ No ▶	DISCONNECT battery ground cable and backup power supply. TRACE Circuit 38 (BK/O) to find short to ground and SERVICE. REPLACE fusible link. RECONNECT backup power supply and battery ground cable. VERIFY Air Bag lamp. GO to **3.2**.
3.2	CHECK VOLTAGE OF CIRCUIT 294 (W/LB) • Deactivate air bag system. • Disconnect diagnostic monitor. • Attach a voltmeter to Pin 13 Circuit 294 (W/LB) on diagnostic monitor wiring connector and to ground. • Is voltage greater than 10 volts?	No ▶ Yes ▶	DISCONNECT battery ground cable and backup power supply. TRACE Circuit 294 (W/LB) from diagnostic monitor connector to find open circuit and SERVICE. RECONNECT backup power supply and battery ground cable. VERIFY Air Bag lamp. REACTIVATE system. GO to **3.3**.
3.3	CHECK BACKUP POWER SUPPLY • Atach a voltmeter to Pin 14, Circuit 656 (P) on diagnostic wiring connector and to ground. • Is voltage greater than 10 volts?	No ▶ Yes ▶	CHECK for backup power supply connections. SERVICE as required. If OK. CHECK 656 (P) and 294 (W/LB). REPAIR as required. RECONNECT and REACTIVATE SYSTEM. VERIFY Air Bag lamp. GO to **3.4**.

CR6758-A

DIAGNOSIS AND TESTING (Continued)

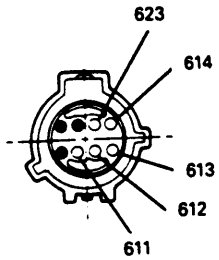
Fault Indication — Air Bag Lamp Flashes Three Times Probable Fault — Loss of Air Bag Circuit Deployment Power and/or Backup Power Supply Disconnected

TEST STEP	RESULT ▶	ACTION TO TAKE
3.4 CHECK RESISTANCE IN CIRCUIT 611 (W/O) • Using an ohmmeter find resistance in Pin 15 Circuit 611 (W/O) on diagnostic monitor wiring connector and to ground. • Is resistance less than 1 ohm?	No ▶	REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
	Yes ▶	GO to **3.5**.
3.5 CHECK RESISTANCE IN CIRCUIT 611 (W/O) — CONTINUED • Disconnect rear safing sensor. • Attach ohmmeter to Pin 15 (Circuit 611, W/O) on diagnostic monitor wiring connector and to ground. • Is resistance less than 1 ohm?	No ▶	GO to **3.7**.
	Yes ▶	GO to **3.6**.
3.6 CHECK RESISTANCE IN CIRCUIT 611 (W/O) — CONTINUED • Disconnect center front sensor. • Attach ohmmeter to Pin 15 (611 W/O) on diagnostic monitor wiring connector and to ground. • Is resistance less than 1 ohm?	No ▶	REPLACE center front sensor. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
	Yes ▶	TRACE Circuit 611 (W/O) to find contact to ground and SERVICE. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.

CR3290-C

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Three Times Probable Fault — Loss of Air Bag Circuit Deployment Power or Backup Power Supply Disconnected

TEST STEP		RESULT ▶	ACTION TO TAKE
3.7	CHECK RESISTANCE IN CIRCUIT 612 (P/O) • Attach ohmmeter to Circuit 612 (P/O) on rear safing sensor wiring connector and to ground. • Is resistance less than 1 ohm?  REAR SAFING SENSOR CONNECTOR	No	▶ REPLACE rear safing sensor. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
		Yes	▶ TRACE Circuit 612 (P/O) to find contact to ground and SERVICE. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.

CR6759-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Four Times
Probable Fault — Potential Short in Air Bag Deployment Circuit

	TEST STEP	RESULT	ACTION TO TAKE
4.0	DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 4 FLASHES		
4.1	CHECK REAR SAFING SENSOR GROUND		
	• Deactivate system. • Place jumper wire on dash panel sensor Circuit 613 (DBW) and to ground. • Verify lamp. Does Air Bag lamp flash code 4?	Yes ▶ No ▶	GO to **4.4**. GO to **4.2**.
4.2	CONTINUE REAR SAFING SENSOR CHECK		
	• Remove jumper wire. • Loosen and tighten rear safing sensor attaching screws. • Turn ignition switch to RUN. • Does Air Bag lamp flash code 4?	Yes ▶ No ▶	GO to **4.3**. VERIFY air bag lamp.
4.3	CHECK SAFING SENSOR GROUND CIRCUIT		
	• Turn ignition switch to OFF. • Disconnect rear safing sensor wiring connector. • Attach ohmmeter to Circuit 613 (DBW) in sensor connector and to ground. • Is resistance less than one ohm?	Yes ▶ No ▶	INSPECT connector terminals and wires and SERVICE as required. REACTIVATE system. VERIFY Air Bag lamp. REPLACE rear safing sensor. REACTIVATE system. VERIFY Air Bag lamp.
4.4	CHECK 611 CIRCUIT IN CENTER FRONT SENSOR		
	• Remove jumper wire. • Disconnect center front sensor. • Verify lamp. Does lamp flash code 4?	Yes ▶ No ▶	GO to **4.5**. REPLACE center front sensor. RECONNECT system. VERIFY lamp. REACTIVATE system. VERIFY lamp.
4.5	CONTINUE CIRCUIT 611 CHECK		
	• Check resistance between Circuit 611 (Pin 15) and 612 (Pin 23) at the back of the diagnostic monitor connector. • Is resistance less than one ohm?	Yes ▶ No ▶	GO to **4.7**. GO to **4.6**.

CR6723-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Four Times
Probable Fault — Potential Short in Air Bag Deployment Circuit

TEST STEP	RESULT	ACTION TO TAKE
4.6 CHECK 611 IN REAR SAFING SENSOR • Disconnect rear safing sensor. • Check resistance between Circuit 611 (W/O) and 612 (P/O). • Is resistance less than one ohm?	Yes ▶	TRACE Circuits 611 and 612 back to diagnostic monitor for open circuit and SERVICE (check connectors and terminals to confirm proper connections). If no open circuit exists, REPLACE diagnostic monitor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.
	No ▶	REPLACE rear safing sensor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.
4.7 CHECK FOR REAR SAFING SENSOR SHORT OR FORWARD CRASH SENSOR INPUT SHORT • Check voltage at back of diagnostic module connector Circuit 617 (Pin 17, PK/O) and to ground. • Is voltage less than one volt?	Yes ▶	GO to **4.8**.
	No ▶	A short to B+ exists in the forward crash sensor input Circuits 615 (GY/W), 616 (PK/BK), 617 (PK/O), 619 (PK/W), or 621 (W/Y). DISCONNECT diagnostic module and CHECK for voltage on these circuits. If no short to B+ exists, REPLACE diagnostic module. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.
4.8 CHECK CIRCUIT 623 (P/W) • Disconnect rear safing sensor. • With voltmeter, probe wiring connector Circuit 623 (P/W) to ground. • Is 623 at battery voltage?	Yes ▶	GO to **4.10**.
	No ▶	GO to **4.9**.

CR6733-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Four Times
Probable Fault — Potential Short in Air Bag Deployment Circuit

TEST STEP		RESULT	ACTION TO TAKE
4.9	CHECK 623 OPEN		
• With voltmeter check voltage at back of diagnostic monitor connector, Circuit 623 (Pin 12, P/W). • Is 623 at battery voltage?		Yes ▶	SERVICE open in Circuit 623 (P/W) between diagnostic monitor and rear sensor. RECONNECT system. REACTIVATE system. VERIFY lamp.
		No ▶	REPLACE diagnostic monitor.
4.10	CHECK CIRCUIT 623 SHORT TO BATTERY POSITIVE (B+)		
• Disconnect diagnostic monitor. • With voltmeter, check rear safing sensor wiring connector Circuit 623 (P/W) and to ground. • Is 623 still at battery voltage?		Yes ▶	Short to B+ exists in Circuit 623 between diagnostic monitor and rear safing sensor. TRACE circuit and SERVICE. If no short exists, REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system. VERIFY Air Bag lamp.
		No ▶	RECONNECT diagnostic monitor. GO to **4.11**.
4.11	CHECK REAR SAFING SENSOR OR CIRCUIT 614		
• With diagnostic monitor reconnected check rear safing sensor resistance between Circuits 623 (P/W) and 614 (BY/O). • Is resistance less than one ohm?		Yes ▶	GO to **4.12**.
		No ▶	REPLACE rear safing sensor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.

CR6734-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Four Times
Probable Fault — Potential Short In Air Bag Deployment Circuit

TEST STEP		RESULT	ACTION TO TAKE
4.12	CONTINUE REAR SAFING SENSOR CHECKS		
• Check rear safing sensor resistance between Circuit 623 (P/W) and Circuits 611 (W/O), 612 (P/O), and 613 (DB/W). • Are all paths open circuits (off scale)?		Yes ▶	An open exists in Circuit 614 (GY/O) between the rear safing sensor and the diagnostic monitor, Pins 8 and 11. FIND open and SERVICE. If no open exists, REPLACE diagnostic monitor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.
		No ▶	REPLACE rear safing sensor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.

CR6735-A

DIAGNOSIS AND TESTING (Continued)

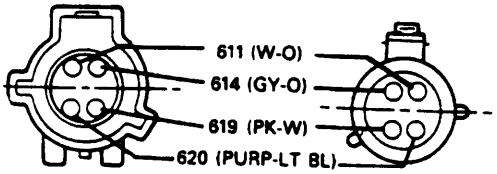
Fault Indication — Air Bag Lamp Flashes Five Times
Probable Fault — Forward Crash Sensor Or Ignition Circuit Shorted to Ground

TEST STEP		RESULT	ACTION TO TAKE
5.0	DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 5 FLASHES		
5.1	CHECK AIR BAGS		
• Turn ignition switch to OFF. • Deactivate system. • Verify lamp. Does Air Bag lamp flash 5 times?		Yes ▶ No ▶	GO to **5.2**. DISCONNECT battery ground and backup power supply. REPLACE driver air bag. RECONNECT and REACTIVATE system. VERIFY Air Bag lamp. If code 10 is present, REPLACE diagnostic monitor.
5.2	VERIFY LAMP WITH ALL THREE FRONT SENSORS DISCONNECTED		
• Deactivate system. • Disconnect all front sensors (Left, Right and Center). • Verify Air Bag lamp.		Air Bag lamp flashes fault code 5 ▶ Air Bag lamp flashes fault code 10 ▶ Air Bag lamp does not flash either fault 5 or 10 ▶	GO to **5.3**. GO to **5.4**. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
5.3	CHECK RESISTANCE OF THE FRONT SENSORS		
• Check for intermittent short in Circuits 617, 619. • Perform all three of the following tests. • Attach ohmmeter to ground and to appropriate pin on each front sensor connector.		Yes ▶	REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.

Sensor	Circuit	Pin	Wire Color
Right	617	17	PK/O
Left	621	19	PK/O
Center	619	18	PK/W

• Is resistance between 1000-1300 ohms for each sensor?	Resistance is NOT between 1000-1300 ohms for one or all sensors ▶	REPLACE faulty sensor(s). VERIFY Air Bag lamp. If lamp flashes fault code 10, INSTALL a new diagnostic monitor. REACTIVATE system. VERIFY Air Bag lamp.

FRONT CENTER SENSOR



CR6736-A

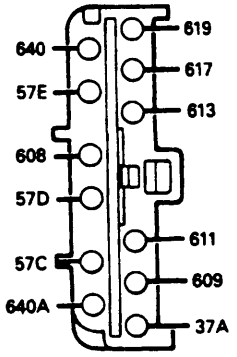
DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Five Times
Probable Fault — Shorted Forward Crash Sensor Deployment Circuit

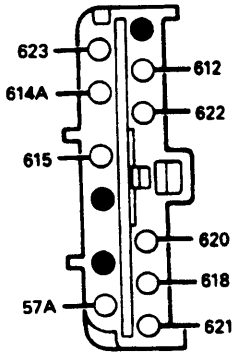
TEST STEP		RESULT	ACTION TO TAKE
5.4	CHECK RESISTANCE IN CIRCUITS 617 (PK/O), 619 (PK/W) AND 621 (W/Y) • Disconnect diagnostic monitor. • Perform all three of the following tests. • Attach ohmmeter to ground and to appropriate pin on the diagnostic monitor wiring connector.	Yes ▶	TRACE appropriate circuit(s) to find contact to ground and SERVICE. RECONNECT system. VERIFY Air Bag lamp. If lamp flashes fault code 10, INSTALL a new diagnostic monitor. REACTIVATE system. VERIFY Air Bag lamp.

Pin No.	Circuit	Wire Color
17	617	PK/O
18	619	PK/W
19	621	W/Y

• Is resistance less than 1 ohm for any test? — Resistance is 1 ohm or greater ▶ GO to **5.5**.



DIAGNOSTIC MONITOR CONNECTOR — GRAY



DIAGNOSTIC MONITOR CONNECTOR — BLACK

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CR6737-A

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5.5	CHECK CIRCUIT 615 (GY/W) BETWEEN MONITC AND DRIVER AIR BAG • Remove jumper in wiring connector to driv bag. Leave open. • Fault code should change to Code 4 or Co	

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Five Times
Probable Fault — Forward Crash Sensor or Igniter Circuit Shorted to Ground

TEST STEP		RESULT	ACTION TO TAKE
5.6	CHECK CLOCKSPRING		
	• Short to ground in Circuit 615 (GY/W) between driver air bag and diagnostic monitor. • Disconnect clockspring connector to 14401 at base of column. • Jumper wiring connector Circuits 614 (GY/O) and 615 (GY/W). • Verify lamp. Does lamp flash code 6?	Yes ▶	TRACE and SERVICE Circuit 615 short to ground between clockspring and diagnostic monitor. If code 10 is present, or no short exists, REPLACE diagnostic monitor.
		No lamp goes out ▶	REPLACE clockspring. RECONNECT system. If code 10 is present, REPLACE monitor. VERIFY Air Bag lamp.
5.7	SHORT IN CIRCUIT 614 (GY/O) OR 623 (P/W) CHECK CIRCUIT 614 (GY/O)		
	• Disconnect rear safing sensor. • With an ohmmeter, check Circuit 614 (GY/O) Pin 11 and ground. • Is resistance less than 1 ohm?	Yes ▶	A short to ground exists in Circuit 614 (GY/O) between safing sensors, air bag and Pin 11 of diagnostic monitor. TRACE short to ground. REPAIR as required. RECONNECT and REACTIVATE system. VERIFY lamp. If no short is found, or code 10 is present, replace diagnostic module.
		No ▶	GO to 5.8.
5.8	CHECK CIRCUIT 623 (P/W) PIN 12		
	• With an ohmmeter check Circuit 623 (P/W) Pin 12 and ground. • Is resistance less than 1 ohm?	Yes ▶	TRACE short to ground in Circuit 623 (P/W). REPAIR as required. RECONNECT and REACTIVATE system. VERIFY lamp. If code 10 exists, REPLACE monitor.
		No ▶	GO to 5.9.

CR6738-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Five Times
Probable Fault — Forward Crash Sensor or Igniter Circuit Shorted to Ground

TEST STEP		RESULT	ACTION TO TAKE
5.9	CHECK REAR SAFING SENSOR		
	• With an ohmmeter, check Circuit 623 (P/W) in sensor connector and ground. (With sensor attached to vehicle.) • Is resistance less than 1 ohm?	Yes ▶	REPLACE rear safing sensor. If code 10 exists, REPLACE diagnostic monitor. RECONNECT and REACTIVATE system. VERIFY Air Bag lamp.
		No ▶	REPLACE diagnostic monitor. RECONNECT and REACTIVATE system. VERIFY Air Bag lamp.

CR6739-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Six Times
Probable Fault — Driver Air Bag Circuit Inoperative

TEST STEP	RESULT ▶	ACTION TO TAKE
6.0 DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT CODE OF 6 FLASHES		
6.1 CHECK CLOCKSPRING • Deactivate air bag system. • Verify air bag lamp while slowly rotating the steering wheel assembly. • Does the air bag lamp still flash fault code 6 and/or flash intermittently?	Yes ▶ No ▶	GO to **6.2**. DISCONNECT battery ground cable and backup power supply. REMOVE jumper wire. INSTALL a new driver air bag. RECONNECT system. VERIFY air bag lamp.
6.2 CHECK SLIP RING — CONTINUED • Disconnect air bag clockspring wiring connector at base of steering column. • Place a jumper wire across Circuits 614 (GY/O) and 615 (PK) of the clockspring connector. • Verify air bag lamp. • Does the air bag lamp still flash fault code 6?	Yes ▶ No ▶	GO to **6.3**. DISCONNECT battery ground cable and backup power supply. REMOVE jumper wire from air bag clockspring wiring connector. INSTALL new clockspring. RECONNECT system. VERIFY air bag lamp. REACTIVATE system.
6.3 CHECK AIR BAG DIAGNOSTIC MONITOR CONNECTORS • Remove jumper wire from air bag clockspring wiring connector. • Disconnect diagnostic monitor connectors. • Before continuing, visually inspect connector to ensure that Pin 11, Circuit 614 (GY/O) and Pin 10, Circuit 615 (GY/W) are touching. • Attach ohmmeter to Pin 11, Circuit 614 (GY/O) on the monitor wiring connector and to Circuit 614 (GY/O) clockspring wiring …s than 1 ohm?	Yes ▶ No ▶	GO to **6.4**. TRACE circuit 614 (GY/O) from clockspring wiring connector to diagnostic monitor connector to locate and SERVICE open circuit. RECONNECT system. REACTIVATE air bag system. VERIFY air bag lamp.

CR4879-C

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DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Six Times
Probable Fault — Driver Air Bag Circuit Inoperative

TEST STEP	RESULT ▶	ACTION TO TAKE
6.4 CHECK RESISTANCE IN CIRCUITS		
• Attach ohmmeter to Pin 11, Circuit 614 (GY/O) on diagnostic monitor wiring connector and to Circuit 615 (GY/W) on the clockspring connector. • Is resistance less than 1 ohm?	Yes ▶	INSTALL a new diagnostic monitor. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.
	No ▶	TRACE Circuit 615 (GY/W) from clockspring connector to diagnostic monitor to find open and SERVICE. RECONNECT system. REACTIVATE system. VERIFY Air Bag lamp.

CR4880-B

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Seven Times
Probable Fault — Monitor Wiring Circuit Inoperative

TEST STEP		RESULT ▶	ACTION TO TAKE
7.0	DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 7 FLASHES		
7.1	VERIFY AIR BAG LAMP		
• Deactivate air bag system. • Visually inspect diagnostic monitor wiring connector. • Reconnect diagnostic monitor wiring connector. • Does the Air Bag lamp flash code 7?		Yes ▶ No ▶	GO to **7.2**. REACTIVATE system. TURN ignition switch to RUN. VERIFY Air Bag lamp.
7.2	INSPECT DIAGNOSTIC MONITOR PIN 7; CIRCUIT 57		
• Disconnect diagnostic monitor. • Inspect Pin 7, Circuit 57 (BK) in wiring connector for good connection to monitor. • Is Pin 7 properly seated and good contact made?		Yes ▶ No ▶	GO to **7.3**. SERVICE terminal and/or connector. RECONNECT diagnostic monitor. VERIFY Air Bag lamp.
7.3	INSPECT CIRCUIT 57		
• With ohmmeter, measure resistance from Pin 7, Circuit 57 (BK) to ground. • Is resistance less than one ohm?		Yes ▶ No ▶	REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. FIND open circuit and SERVICE. RECONNECT system. VERIFY Air Bag lamp.

CR4881-D

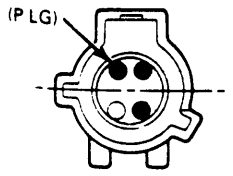
DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Eight Times
Probable Fault—Forward Crash Sensor Improperly Attached or Grounded

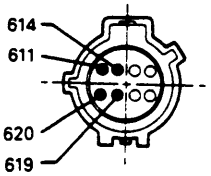
TEST STEP		RESULT ▶	ACTION TO TAKE
8.0	DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 8 FLASHES		
8.1	INSPECT FRONT SENSORS		
• Visually inspect each front sensor to ensure they are attached (properly grounded) to the vehicle. • Are all sensors properly attached to vehicle?		Yes ▶ No ▶	GO to **8.2**. ATTACH sensor(s) properly. VERIFY Air Bag lamp.
8.2	INSPECT EACH SENSOR'S WIRING CONNECTORS		
• Visually check each front sensor connector for proper connection to the vehicle wiring. • Are all sensors properly connected?		Yes ▶ No ▶	GO to **8.3**. CONNECT sensor(s) properly. VERIFY Air Bag lamp.
8.3	CHECK FOR RESISTANCE IN FRONT SENSORS		
• Disconnect battery ground cable and power supply. • Disconnect all front sensors. • Perform the following tests. • Attach an ohmmeter to ground and to appropriate pin on each front sensor connector.		Yes ▶ No ▶	GO to **8.4**. REPLACE sensor(s). VERIFY Air Bag lamp.

Sensor	Circuit	Wire Color
Right	618	P/LG
Left	622	T/BK
Center	620	P/LB

• Is resistance less than 1 ohm for each test?



RH AND LH FRONT SENSOR CONNECTOR



FRONT CENTER SENSOR CONNECTOR

CR4883-C

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Eight Times
Probable Fault — Forward Crash Sensor Improperly Attached or Grounded

TEST STEP		RESULT ▶	ACTION TO TAKE
8.4	CHECK FOR RESISTANCE IN CIRCUITS 618 (P/LG), 620 (P/LB) AND 622 (T/BK) • Reconnect all front sensors. • Perform all three of the following tests. • Attach ohmmeter to ground and to appropriate pin on diagnostic monitor connector. Probe back of connector. • Is the resistance less than 1 ohm for each test?	Yes ▶	INSPECT terminals in diagnostic monitor connector and SERVICE as required. If terminals and connections are OK, INSTALL a new diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp.
		No ▶	TRACE appropriate circuit(s) to find open(s) and SERVICE. RECONNECT system. VERIFY Air Bag lamp.

Pin No.	Circuit	Wire Color
20	618	P/LG
21	620	P/LB
22	622	T/BK

CR4884-B

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Nine Times
Probable Fault — Open Forward Crash Sensor Deployment Circuit

TEST STEP	RESULT ▶	ACTION TO TAKE
9.0 DURING SYSTEM PROVE-OUT AIR BAG LAMP PROVIDES A FAULT INDICATION OF 9 FLASHES		
9.1 INSPECT EACH FRONT SENSOR CONNECTOR TO VEHICLE WIRING • Visually inspect each front sensor, left, right, and center for a proper connection to the vehicle wiring. • Are all sensors properly connected?	Yes ▶ No ▶	GO to **9.2**. CONNECT sensor(s) properly. VERIFY air bag lamp.
9.2 CHECK RESISTANCE OF EACH FRONT SENSOR • Disconnect battery ground cable and power supply. • Disconnect all front sensors. • Perform all three of the following tests on all three of the front sensors. • Attach ohmmeter to ground and to appropriate pin on front sensor connector.	Yes ▶ No ▶	GO to **9.3**. REPLACE those sensors that did not have a resistance between 1000-1300 ohms. RECONNECT system. VERIFY air bag lamp.

Sensor	Circuit	Wire Color
Right	617	PK/O
Center	619	PK/W
Left	621	W/Y

• Is resistance of each sensor between 1000-1300 ohms for each test?

TEST STEP	RESULT ▶	ACTION TO TAKE
9.3 CHECK RESISTANCE OF CIRCUITS 617 (PK/O), 619 (PK/W) AND 621 (W/Y) • Reconnect front sensors. • Deactivate system. • Perform all three of the following tests. • Disconnect diagnostic monitor and attach ohmmeter to ground and to appropriate pin on diagnostic monitor wiring connector.	Yes ▶ No ▶	REPLACE diagnostic monitor. RECONNECT system. VERIFY air bag lamp. REACTIVATE system. TRACE appropriate circuits to locate opens and SERVICE. RECONNECT system. VERIFY air bag lamp. REACTIVATE system.

Pin No.	Circuit	Wire Color
17	617	PK/O
18	619	PK/W
19	621	W/Y

• Is the resistance between 1000-1300 ohms for each test?

CR4885-C

SPECIFICATIONS

MAJOR SYSTEM COMPONENT PART NUMBERS

Component	Part Number
Driver Air Bag	54043B13 A
Sensor and Bracket Assy, Front Right	14B004 A
Sensor and Bracket Assy, Center	14B006 A
Sensor and Bracket Assy, Rear	14B007 A
Sensor and Bracket Assy, Front Left	14B005 A
Backup Power Supply	14B165 A

CR6216-B

TORQUE SPECIFICATIONS

Description	N·m	Lb-Ft
Air-Bag Module-to-Steering Wheel Nuts	4-6	35-53 (Lb-In)
Front Center Sensor-to-Radiator Support Screws	5-7	4-5
RH and LH Front Sensor-to-Fender Apron Screws	8.7-12.3	6-9
Rear Sensor-to-Dash Panel Nuts	5-7	4-5

CR4156-C

SPECIAL SERVICE TOOLS

ROTUNDA EQUIPMENT

Model	Description
059-00010	Dwell-Tach-Volt-Ohms Tester

CG5360-A

DIAGNOSIS AND TESTING (Continued)

Fault Indication — Air Bag Lamp Flashes Three Times Probable Fault — Loss of Air Bag Circuit Deployment Power and/or Backup Power Supply Disconnected

TEST STEP		RESULT ▶	ACTION TO TAKE
3.4	CHECK RESISTANCE IN CIRCUIT 611 (W/O)		
• Using an ohmmeter find resistance in Pin 15 Circuit 611 (W/O) on diagnostic monitor wiring connector and to ground. • Is resistance less than 1 ohm?		No ▶	REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
		Yes ▶	GO to **3.5**.
3.5	CHECK RESISTANCE IN CIRCUIT 611 (W/O) — CONTINUED		
• Disconnect rear safing sensor. • Attach ohmmeter to Pin 15 (Circuit 611, W/O) on diagnostic monitor wiring connector and to ground. • Is resistance less than 1 ohm?		No ▶	GO to **3.7**.
		Yes ▶	GO to **3.6**.
3.6	CHECK RESISTANCE IN CIRCUIT 611 (W/O) — CONTINUED		
• Disconnect center front sensor. • Attach ohmmeter to Pin 15 (611 W/O) on diagnostic monitor wiring connector and to ground. • Is resistance less than 1 ohm?		No ▶	REPLACE center front sensor. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.
		Yes ▶	TRACE Circuit 611 (W/O) to find contact to ground and SERVICE. REPLACE diagnostic monitor. RECONNECT system. VERIFY Air Bag lamp. REACTIVATE system.

CR3290-C